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LODI DISTRICT

LOCATION

The Lodi mining district is located in the Lodi Hills, northwestern Nye County. The district is restricted to that portion of the Lodi Hills in the southern three-quarters of Township 13 North, Range 36 East. Prospects on the northern tip of the Lodi Hills are included in the Quartz Mountain district north of Lodi; the mines at Ellsworth, in the Paradise Range across Lodi Valley to the east of the Lodi Hills, are in the distinctly separate Ellsworth district.

HISTORY

Silver-lead ore was discovered at the site of the Illinois Mine, eastern Lodi Hills, in 1874. The district was organized in 1875, and a ten-ton smelter was erected by 1878. By 1880, when the first period of operation ended, about \$400,000 had been produced (Paher, 1970).

Operations resumed in 1905 and the camp was then known as Marble. A new 100-ton smelter was completed in 1909 and work on the property continued until 1914 but the smelter apparently never produced metal as no production is credited to the Illinois Mine after 1890. Some underground development work was done around 1919 by Goldfield Consolidated Mines Co., but no production resulted from that activity. Paher (1970) mentions that some ore was produced from the Illinois Mine in 1940, but there has been no activity since that time.

Tungsten was discovered in the district about 1944, and during the period from 1951 to 1963, the mines of the district have yielded more than \$7 million in tungsten (Stager and Tingley, in prep.). The major producers have been the Victory, El Capitan, and Kay Cooper Mines.

GEOLOGIC SETTING

The Lodi Hills are primarily composed of Mesozoic metasedimentary and metavolcanic rocks which have been intruded by a large granitic mass. The oldest exposed rocks are greenstones, pelitic mudstone, and siltstone with minor quartzite, dolomitic sandstone, and sandy dolomite of the Triassic Excelsior Formation. These rocks occur mainly in the northern Lodi Hills, north of the Lodi mining district. Most of the sedimentary rocks in the southern Lodi Hills are carbonate strata, with some shale and siltstone, of the Late Triassic Luning Formation (Kleinhampl and Ziony, 1984).

Plutonic rocks ranging in composition from granite to diorite crop out in the southern Lodi Hills. The largest pluton, the Illinois stock, is spatially and genetically related to the tungsten deposits of the district. The contact of the Illinois stock with the sedimentary rocks is interpreted to be a low-angle fault on the west side of the district near the Victory tungsten mine (Humphrey and Wyatt, 1958). The east side of the contact, near the Illinois mine, may be a normal intrusive contact although it could be an extension of the low-angle thrust (Dougan thrust) forming the western contact (Kleinhampl and Ziony, 1984).

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ORE DEPOSITS

Metallic ore deposits in the Lodi district are concentrated in two areas, silver-lead occurrences on the east side of the Illinois mine, and tungsten occurrences along the west and south side of the district in the area between the Victory and El Capitan Mines. In addition, small amounts of talc have been shipped from a deposit (Huntley Mine) on the northeast side of the district.

At the Illinois Mine property, three steep northwest-striking veins, the Illinois, Welch, and East veins occur within a shear zone that cuts limestone and shaley limestone of the Luning Formation. The zone is up to 150 feet wide and is traceable for about one mile along strike. Most of the mine production was from the Illinois and Welch veins; they vary from 2 to 20 feet in width and are usually not over 20 feet apart. Mining has been done from surface to a depth of 700 feet (Kral, 1951). The veins, on outcrop, are expressed as lenses and fracture coatings of manganese and iron oxides which occur along parallel fault zones. In some areas, the limestone wall rock is webbed with silica veinlets. The ore minerals were cerussite, anglesite, and hemimorphite in the near-surface material, and galena in the deeper ores.

The tungsten deposits of the Lodi Hills, although not discovered until the early 1940's, have accounted for the bulk of the metal production of the district. Tungsten deposits occur mainly as disseminated scheelite in crushed and sheared granodiorite of the Illinois stock and in tactite along the contacts of the stock with limestones of the Luning Formation.

The bulk of the tungsten production in the district came from the Victory Mine near the southwest end of the Lodi Hills. Scheelite at the Victory Mine occurs as disseminations in the outer zone of the Illinois stock. The principal orebody was 2 to 4 feet wide and was enclosed in a feldspathized zone 10 to 40 feet thick that formed along a shear zone in the stock. (Stager and Tingely, in prep.). Some scheelite occurred west of the Victory, along the contact of the stock with limestone, but the major production came from the granitic-hosted orebody. The nearby Kay Cooper and El Capitan Mines are similar but much smaller tungsten occurrences.

SELECTED REFERENCES

- Humphrey, F. L., and Wyatt, M. (1958) Scheelite in feldspathized granodiorite at the Victory Mine, Gabbs, Nevada: Econ. Geol., v. 53, p. 38-64.
- Kleinhampl, F. J., and Ziony, J. I. (1984) Mineral resources of northern Nye County, Nevada: NBMG Bull. 99B.
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- Paher, S. W. (1970) Nevada Ghost Towns and Mining Camps: Berkeley, CA, Howell-North.
- Stager, H. K., and Tingely, J. V. (in prep.) Tungsten deposits of Nevada: NBMG Bull.