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JACKSON (GOLD PARK) DISTRICT

Introduction

The writers are largely indebted for the following summary of the Jackson district to Kral (1951, p. 76-80) and to Bonham (1970), who have best described the area. Mining properties were located on the accompanying map (fig. __) by comparing Kral's and Bonham's descriptions with the mine workings shown on the North Shoshone and the South Shoshone Peak 15-minute topographic quadrangles. Discrepancies that could not be resolved are annotated with queries.

Location and History

The Jackson (Gold Park) district, where gold was first discovered by Thomas Barnes in 1864 (Kral, 1951, p. 76, citing Thompson and West, 1881), is located high on the western flank of the Shoshone Mountains close to the Nye and Lander County boundary. Kral (1951, p. 76) reports that the district was first organized in 1864 as the North Union, and was reorganized in 1878 as the Jackson district. It was also known briefly as the Barnes Park district early in its history. The district is generally considered to include the area in and immediately adjacent to an inlier of pre-Tertiary rocks, but in the present report an auxiliary area in Tertiary rocks about five miles farther south is also included with the district.

Kral (1951, p. 77-79) summarizes production from 1882 to 1949, which is shown in table __, but production apparently did not begin until 1893, after the so-termed 1880 "rediscovery" (Paher, 1970, p. 176) of the district, when the Nevada Mining Co. acquired the Gold Park Group of three claims and built a stamp mill. The early recorded and recently known production is given by Kral (1951, p. __) as about $ 37,000. Bonham (1970) states that, with the exception of a limited exploration program during 1967-68 by a small company, there has been no activity in the district since the early 1940's. The present report lists (table __) a total of about $30,000 from 2,262+ tons of ore, a little of which was mined in the 1940's and 1950's (U.S. Bur. Mines Mineral Yearbook, 1947). Total production from the Gold Park group (including the Arctic, Star of the West and San Francisco properties) is reputedly much greater than the recorded production, and figures between $500,000 and $1,000,000 are given (Kral, 1951, p. 76, citing Lincoln, 1923, p.). There has been very little production since litigation arose in 1911, and Bonham (1970) states that the oft-cited $500,000 to $1,000,000 figures refer to the period 1893-1911. Paher (1970, p. 176), however, states that the district produced over $500,000, with most of the production during the periods 1897-99 and 1921-23.

Geologic Setting

Much of the following discussion of the geologic setting of the Jackson district is based on a geologic report and map by Benham (1970) that encompasses the district and surrounding region. The area of the report is underlain by rocks of Permian(?), Tertiary and Quaternary age, with Oligocene and Miocene volcaniclastic rocks and ash-flow tuffs comprising about 90 percent of bedrock exposures.

A several square-mile inlier of pre-Tertiary metavolcanic rocks is the host for the chief mineral deposits and is considered to be Permian in age by Benham (1970). The present writers tentatively concur and, like Benham, assign the rocks to the Pablo(?) Formation. The Pablo(?) here consists chiefly of altered andesite breccia and lesser amounts of altered andesite lavas in a section believed by Benham (1970) to attain a thickness of about 1,000 feet. Outcrops of the unconformably overlying Tertiary section total about 4,500 feet in thickness, but all of the contacts between the three major depositional units are unconformities and the total thickness was originally greater (Benham, 1970). The three major depositional units, the Underdown Tuff of Benham (1970), Benita Canyon Formation of Benham (1970), and the Tadysho Quartz Latite, from oldest to youngest, are all silicic, and range in composition from rhyolite to dacite. Welded ash-flow tuffs predominate, and epiclastic strata derived from tuffaceous rocks are common in the Benita Canyon Formation of Benham.

Plugs of rhyolitic porphyry locally are seen to have intruded the Bonita Canyon Formation of Bonham and the Toiyabe Quartz Latite, and are believed to be slightly younger than the latter. Siliceous rhyolitic dikes of unknown age cutting the Permian(?) rocks (Kral, 1951, p. 76) may be genetically related to the rhyolitic porphyry plugs. This relationship is only postulated, since the authors did not examine the dikes, nor were they described by Bonham (1970). Intermediate dikes of unknown age and ranging in composition from dacite porphyry to pyroxene andesite intrude the Underdown Tuff of Bonham and the Bonita Canyon Formation of Bonham. The dikes do not occur in the Jackson district proper according to Bonham (1970), but are present in the ancillary area about five miles to the south in altered and prospected Tertiary rocks. Bonham (1970) calls attention to McKee's (1968) view that the dikes are younger than the Toiyabe Quartz Latite.

Probable Pliocene or, less likely, Pleistocene but post-mineral, basaltic flows derived from local vents crop out adjacent to the district. These are the youngest volcanic rocks known, and are overlain by unconsolidated surficial deposits of Quaternary age.

Cenozoic normal faults with chiefly dip-slip movement are the dominant structural features in the area mapped by Bonham. Although Silberling (1959, p. __) found evidence of strong deformation of Late Mesozoic age in what he mapped as Pablo Formation at Ione, the generally massive nature of the Pablo(?) in the Jackson district made it difficult to recognize pre-Cenozoic structure. Bonham (1970) was also unable to recognize any Cenozoic compressional folds with a regional pattern. Neither did Bonham map any major structures in the vicinity of the mines themselves, but he describes mercury and uranium-fluorite deposits along faults in Tertiary rocks at the War Cloud and Dottie Lee properties south of the Jackson district proper and at the Hazel E. uranium prospect about three miles farther southward. Kral (1951, p. 76) states that there has been much faulting in the Permian (?) rocks of the district proper, and that ore zones have been offset and, in some cases, lost because of post-ore faulting. One of the main veins, the Arctic, is said (p. 78) to be cut off above the lower level of mine workings by a flat fault.

The inlier of Permian(?) rocks in the Jackson district is in a major gently northwestward-tilted fault block. Similar rocks are successively downdropped to the east in major fault blocks, but are largely concealed by Tertiary units. Faults in the large tilted block with the Permian(?) inlier are peculiarly and sharply arcuate or have irregular traces, unlike the straight to mildly arcuate faults in the surrounding area. As a whole, most of the faults mapped by Bonham (1970) are in the pre-Toiyabe Quartz Latite rocks, and are attributed by him to a decrease in faulting since the extravasation of the former unit and since the inception of normal faulting in the late Oligocene. Bonham (1970) states that faulting is still active, however, and that the main uplift of the range probably took place during the late Pliocene and early Pleistocene.

Alteration and metamorphism has affected much of the Permian(?) rocks, and Bonham (1970) states that the original igneous minerals have been altered by greenschist facies metamorphism. Plagioclase is completely albitized and the crystals are also calcitized and chloritized, as are the ferromagnesian minerals, which are also altered to iron oxides. The Tertiary rocks, especially the pre-Toiyabe Quartz Latite units, are generally devitrified, and the Toiyabe Quartz Latite is locally devitrified. The Bonita Canyon Formation of Bonham (1970) and the younger rhyolitic plugs are locally hydrothermally altered, with the former silicified, sericitized, calcitized, zeolitized, and chloritized, and the latter sericitized, especially in the area about five miles south of the Jackson district proper, near Idlewild Creek. Outside the Jackson district proper, dikes of intermediate composition intruding the pre-Toiyabe Quartz Latite volcanic units but believed by McKee (see Bonham, 1970) to be younger than the latter, are propylitized and otherwise hydrothermally altered. Gold, silver, and mercury-uranium-fluorite mineralized zones are associated with some of the hydrothermally altered areas.

Economic Geology and Mineral Deposits

The main gold and silver deposits of the district are associated with base-metal (lead and copper) quartz veins cutting the Permian(?) meta-andesite inlier. Porphyry dikes (Tertiary?) are said to flank some of the gold-bearing quartz veins (Mines Handbook, 1931, p. 1501), but the relationship of what may be similar dikes to the veins is not known (Kral, 1951, p. 76). The ore is quartzose and contains variable amounts of galena and pyrite, with small amounts of chalcopyrite locally. Ore values are principally in gold with a varying gold-silver ratio, and most of the production has come from the oxidized zone, where cerrusite and other oxidized minerals are present. Lead, and in places, copper are guides to gold and silver content and vary directly with the precious metals. Bonham (1970) states that most of the ore-bearing quartz veins strike northeast, dip southeast, and range in thickness from a few inches to ten feet. He mentions that these deposits are pre-Tertiary, and probably Mesozoic in age. Other gold-silver deposits occur in the Tertiary Bonita Canyon Formation of Bonham (1970) at the Ward mine (fig. __) where pyritic stringers of chalcedonic quartz cutting rhyolitic ash-flow tuffs may contain free gold in a finely divided state.

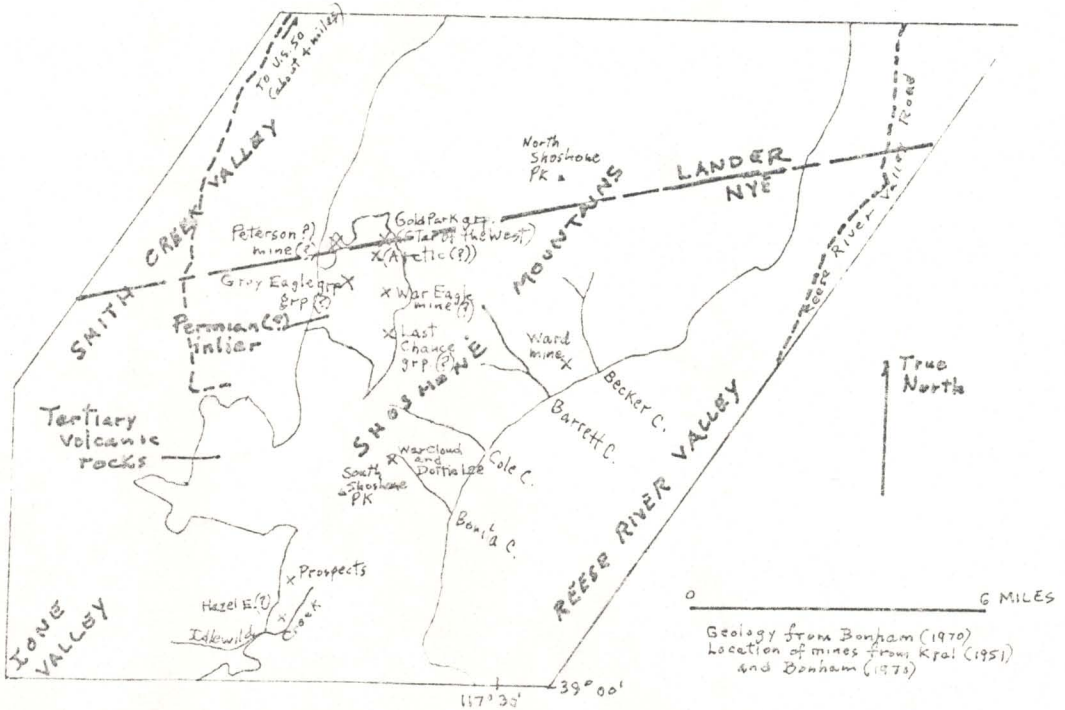

FIG. ___ Major mining properties in the Jackson (Gold Park) mining district, Nye and Lander Counties, Nevada.

Mercury, uranium, and fluorine-bearing minerals are also present in the Tertiary rocks peripheral to the Jackson district proper, and Bonham's (1970) descriptions of the deposits are summarized here. Cinnabar as coatings and disseminated crystals occur in a three- to four-foot-wide fault zone in argillized silicic ash-flow tuff of the Bonita Canyon Formation of Bonham at the War Cloud property (fig. __). Nearby, at the Dottie Lee property, the same unit is the host for minor cinnabar occurring with stringers, veins, and pods of uraniferous purple fluorite in the hanging wall of a fault. Another fault zone in rhyolitic ash-flow tuff is slightly radioactive at the Hazel E. prospect (fig. __).

Properties in Permian(?) Rocks

The Mines Handbook (1922, p. 1345) lists the Star of the West Mining Company with 14 claims, four patented, in the Gold Park (Jackson) district. These claims represent the Gold Park group. Ore was said (p. 1345) to average $50 per ton in silver and gold. One vein, 15 feet wide, showed $15 per ton milling ore and a two-foot pay streak. The Gold Park group of claims (fig. __) has yielded the largest amount of ore, but most of the production was not recorded. The group includes the major Star of the West mine, long since worked out within the explored area (Kral, 1951, p. 77), and also the important Arctic claim, as well as lesser-valued claims, including the patented San Francisco. The brief summary here draws mainly from Kral (1951, p. 76-78), who lists owners and describes the group in some detail.

The Star of the West and the Arctic (fig. __), separate quartz veins, have similar attitudes, N. 15-30 E., 30-50 SE. The former ranges in width from a few inches to five feet, and the latter averages four feet in width. As work has been done in the oxidized zone. Three adits at levels about 100 feet apart extend southwest along the Star of the West vein. Considerable stoping was done along the vein from the adits, which total about 2,200 feet in length; in addition, there is a minor crosscut and some drifting on intermediate levels totalling 800 feet. The vein is apparently terminated by faults at each end, but Kral suggests that the vein is displaced only slightly by the southern fault and may be exposed in workings of the intermediate levels. Between 1927 and about 1951 only 43 tons of ore was produced, and it was valued at about $86 per ton.

The Arctic vein is developed by less workings than the Star of the West, and includes an inclined shaft, two adits, and numerous stopes. The San Francisco vein is said to assay about $8 per ton and to be generally wider at the surface than the Star of the West and the Arctic, but to pinch severely at only 46 feet in an 80-foot shaft on the property.

The War Eagle mine (fig. __) yielded $15,500 in the 1934-41 period in gold and silver mined from the oxidized zone. Large amounts of cerrusite and galena associated with the precious metals provided a guide to selective mining along the four-foot-wide quartz vein. Workings consist of two adits, totalling about 600 feet in length, connected by a 130-foot raise. Other properties, like the Peterson mine, Last Chance group, and the Grey Eagle (formerly Bill Boyd) group are scattered in the Permian(?) inlier (fig. __) and consist of numerous adits and several shafts. The workings at any one group consist of as much as a thousand feet of development, but known production is less than about $5,000.

Properties in Tertiary rocks

The several mining properties mentioned below in Tertiary volcanic rocks are near enough to the mines in the Permian(?) inlier of the Jackson district proper to be included as part of the district. Kral (1951, p. 198) described one of these, the Ward mine, with the Union district properties. The Ward mine is said by Kral to occur along shear zones in rhyolite in narrow seams that average a few inches in width. Bonham (1970) does not mention the shear zones, but states that the precious-metal-bearing chalcedonic quartz cuts rhyolitic ash-flow tuff (rather than rhyolite) of the Bonita Canyon Formation of Bonham. There has apparently been little or no activity on the property in recent years. Nearly a thousand feet of drifts in numerous adits have been driven to develop the area, which, according to Kral (p. 198) has most promise as a large low-grade deposit. This occurrence of gold and silver is similar to other occurrences that extend to the southern extremity of the Shoshone Range. It is especially like some of the Cloverdale deposits in approximate age and kind of host rocks, if not in origin.

Minor workings, including trenches and cuts, explore the War Cloud and Dottie Lee properties, which have been described elsewhere above. The latest work known was trenching and sampling done under the direction of Grant Huntley in 1966? at the War Cloud and vicinity. A single-pipe retort may have been on the property (Bailey and Phoenix, 1944, p. 154).

Neither the Hazel E. uranium property nor the prospected hydrothermally altered rhyolite in the area about five miles south of the Jackson district proper were examined by the authors, but these have been described by Bonham (1970) and are briefly mentioned elsewhere above. They apparently have not yielded any ore.

REFERENCES CITED

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Table __. Production of Jackson District

(Au, Ag, Pb, Cu), 1882-1971.

Year	Ore tonnage	Value
1882-1949	~~2,255~~ 2,365 + est 2,145 tons valued at $37,287	$ [1] ~~29,627~~ 41,087
1947	81	[2] 14,500
1948	cleanup	[3] 213
1950	7	[4] ~~107~~
1954	. Small Au, Ag production	[5] ---

No production data available after 1954, but production believed to be very small or nil through 1971.

Totals	[6] ~~2,262+~~ 2,372 +	[6] $ ~~29,734+~~ 41,194+

1. Computed from Kral (1951, p. 77-79 ~~and~~ 198).
2. Minerals Yearbook (1947, p. 1469).
3. ibid. (1948, p. 1559).
4. ibid. (1950, p. 1548).
5. ibid. (1954, p. 700).
6. Lincoln (1923, p. 171) credits the district with a total production valued between $ 500,000 and $ 1,000,000 but does not give the tonnage this value represents. This production is largely unrecorded.