

NBMG OFR 83-11
See also 83-12 for
geochemical results.

FISH LAKE VALLEY DISTRICT

(89)

Item 4

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The Fish Lake Valley district covers the eastern slope of the northern White Mountains in Esmeralda County. The district extends from near Sugarloaf Peak on the Esmeralda-Mineral County line south to the vicinity of Chiatovich Creek. Mining properties are grouped in two separate areas within the district, one near Sugarloaf Peak and the other to the south around the B & B mercury mine. Two other mines, the Mollini mine on the state line south of Indian Creek and the Lake Mercury mine on the east side of Fish Lake Valley are also included in this district although they are quite distant from the main district activity. Most of the mines and prospects in the western or White Mountains part of the district are within the Inyo National Forest and a large area west of the B & B property is within the Sugarloaf Roadless area.

The earliest activity in the district was at the Tip Top, or Gold Hitt gold mine south of Sugarloaf Peak. Paher (1970) describes activity at Gold Hitt in 1905, but he has the area confused with Queen Canyon to the west. The Tip Top was known to be active by 1915, however, and a production of \$130,000 is credited to the mine by 1918. The Mount Montgomery or Wild Rose mercury mine produced during World War I. The mercury deposits around the B & B were discovered in 1927 (Bailey and Phoenix, 1944), and were active in the 1930's and 1940's. Currently, interest in the district is high and gold exploration programs are underway near most of the old mercury and gold properties. In the summer of 1982, no properties were beyond the exploration stage, however.

The geology of the northern White Mountain is dominated by the large Inyo batholith complex which forms the spine of the range. Narrow bands of Cambrian and Ordovician rock which have been intruded by the batholithic rocks outcrop in a northwest-southeast line along the east side of the range, east of Boundary Peak and west of a line through Mustang Mountain and the drainage of Dry Creek.

Generally, this line marks the western boundary of the Fish Lake Valley district. East of the line, rocks cropping out are andesites and rhyolites associated with a large Tertiary volcanic center (Stewart and Carlson, 1976). Younger Quarternary basalts cap some of these Tertiary rocks along the range flanks to the east. Most of the mineral occurrences in the northern part of the Fish Lake Valley district are associated with andesite and rhyolite domes and plugs within the Tertiary volcanic outcrop area. To the south, along Dry Creek, the Red Rock and Container mercury mines occur in brecciated Cambrian rocks near a mapped thrust contact.

At the Wild Rose mercury mine on Sugarloaf peak, cinnabar and yellow mercury chlorides occur in brecciated, silicified rhyolite along the margin of what appears to be an intrusive plug. The best mineralization was seen in two circular areas of hydrothermal breccia exposed in the pit above the old retort site. The breccia zones have a N30°E trend and, it is interesting to note, are on the projection of northeast trending structures seen in the adjacent Buena Vista district. The Tip Top gold mine, south of the Wild Rose deposit, occurs along a strong north-south vein south of its intersection with a N30°E structure. The vein is 10' to 15' wide and is composed of banded, lamellar quartz containing fine-grained black sulfides. The wall rock near the vein is silicified and laced with small quartz veinlets. To the southwest of the Wild Rose-Tip Top area, several old prospects follow a wide N30°E shear zone which contains local areas of brecciation and quartz veining. Dumps contain silicified rock with considerable jarosite present in vugs. The Tip Top mine and vicinity (at the time of the examination) was controlled by Cordex Exploration Co., and considerable exploration drilling has been done in the general area within the past year.

At the Buckskin mercury property, located on a fork of Pinchot Creek east of Sugarloaf peak, cinnabar occurs in a pipe-like body of hydrothermal breccia at the intersection of a strong N30°E structure with a N75°E shear zone. The

rock in the breccia has been silicified, brecciated, then cemented with chalcedonic quartz. Cinnabar is apparently a late stage mineral as it coats open fractures which cut the breccia. A large area of discoloration in the volcanic host rock surrounds the mine area. Fresh claim posts were seen in the area, but there was no evidence of recent work. At the F & L mercury mine to the south cinnabar and mercury chloride minerals occur in breccia zones and open conduits localized on and around a bleached, silicified area which caps a hill south of Mustang Canyon. The top of the hill is composed of opaline hot springs deposits, and the dome shape of the hill may indicate that it is underlain by a shallow volcanic plug. Mineralized breccias exposed in the F & L pit follow a N30°E shear zone that crosses through the mine area. The zone has an exposed width of about 400 feet. The breccia centers occur within the shear zone, where N70°-80°W structures intersect it. The F & L is credited with only a few flasks of mercury production in the 1930-40's. The entire area around the deposit is now under the control of U.S. Steel Corporation, and, in the summer of 1982, they were actively exploring the area for gold. The B & B mercury deposit, about one mile southwest of the F & L, is in a similiar geologic setting, it is within a large area of brecciated, opaline material associated with a hydrothermal center. Cinnabar and mercury chloride minerals are found as fracture coatings within the brecciated zone. Here, as at the mercury deposits to the north, the important structural direction seems to be N30°E breccia zones occur at points along this trend where it is intersected by cross-cutting structures.

The B & B mine has the largest recorded production of mercury of all the mines in the Fish Lake Valley district. Between its discovery and 1943, it recorded a production of 2659 flasks, but the mine produced again in the 1960's.

In the southern part of the district, south of Dry Creek, the Red Rock and Container mines and the Picture Rock and Montana prospects are all mercury

occurrences in Cambrian sediments in the upper plate of a thrust sheet. The host rock is mapped as a brecciated, marble but, in outcrop, it more closely resembles a quartzite. The rock is highly silicified, however, and could originally have been a marble. At the Red Rock, cinnabar was seen to coat quartz crystals and fill breccias along strong N30°-40°E and N80°W structures. The setting at the Container mine is similiar, there breccia fillings of cinnabar were seen, and some vugs were coated with yellowish barite crystals. Coating of a yellow mineral, possibly antimony oxides or mercury chloride were also noted. No evidence of recent activity was noted around these properties.

The McNutt and Crimson Crown mercury prospects, just east of the Red Rock area, are both volcanic hosted deposits. The McNutt explores a small opalite zone exposed in a wash, but directly north of it an eliptical outcrop of silicified rhyolite is exposed which is laced with stockworks type quartz veinlets. Some of the larger ($\frac{1}{2}$ ") veinlets have fine-grained pyrite within them and along their walls. Evidence of recent exploration was seen at this deposit.

Across Fish Lake Valley to the east, at the south end of the Volcanic Hills the Lake, or Riek mercury prospect occurs in shear zone rubble in a recent hot spring sinter blanket. The spring area is weakly active and is now seeping water. A large diameter drill hole, probably a geothermal test well, has recently been drilled at the spring site. The well is capped, and valves to test flow are in place.

The Mollini Mine, within National Forest lands near the California state line in the extreme southern part of the district, explores a narrow quartz vein which cuts rocks of the Precambrian Wyman formation within the contact aureole of the Inyo batholith. Numerous lenses of epidote skarn are exposed on the ridge near the quartz vein outcrop, but the skarn does not appear to be mineralized. The quartz vein itself shows only weak copper staining.

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