

## SAN EMIDIO DESERT - LAKE RANGE AREA

## LOCATION

For the purposes of this paper the area includes the east side of the San Emidio Desert and the north end of the Lake Range. This puts it approximately 12 miles south of Gerlach and to the west of State Highway 447. The entire area is on the Kumiva Peak 15 minute topographic map.

## HISTORY

Not too much is known about this area and very little has been written about it. The area contains occurrences of sulphur, cinnabar, and gold. The first mention of this area that the writer found in the literature was by Olson (NBMG Bull. 65, p. 257). He discusses the sulphur deposits but closes his write-up by stating that the data came via oral communication from H. F. Bonham, Jr. The only other mention of this area in published literature that the writer could find is in Bonham and Papke (Bonham and Papke, 1969, p. 94 & 130) where Bonham discusses the cinnabar occurrences and Papke mentions, again, the sulphur occurrences. No mention is made of the gold occurrence shown on the Mineral Resource map of Washoe and Storey Counties (Bonham and Papke, 1969). Bailey and Jones (unpublished data) have visited the sulphur/cinnabar area but have no more to say about it than can be found in Bonham and Papke (op. cit.). There is no recorded production for this area, however, Olson (op. cit.) through Bonham (?) determined that a few tons of high-grade sulphur has been mined and shipped in past years. The cinnabar is merely an occurrence and will never be economic. The gold occurrence as shown by Bonham and Papke (op. cit.) may possibly have had a very small amount of production.

## GEOLOGIC SETTING

Lake Lahontan occupied most of the basins in northwestern Nevada during the late Pleistocene (Bonham and Papke, p. 42) and one of these present day basins is the San Emidio Desert. Basically these lake sediments consist of clays, silts and minor sand in the interior of the Desert and intermixed clays, silts, sands and gravel along the margins.

"The Lake Range bounds Pyramid Lake on the east and extends north to just south of the town of Empire. It is an eastward-tilted block bounded on the west by northerly-trending faults with substantial dip slip." At the north end of the range is a small area of Mesozoic metamorphic rocks, chiefly slate and quartzite, but "most of the range is composed of dacitic to basaltic volcanic rocks of Miocene and Pliocene age. Lenses of tuff and tuffaceous pyroclastic rocks and thin dacite welded, ash-flow tuffs are intercalated with the flows and breccias" (Bonham and Papke, 1969, p. 49).

## ORE DEPOSITS

Only two mineral localities are known to exist in this area. One is a sulphur-cinnabar occurrence and the second is a gold occurrence.

The sulphur-cinnabar occurrence is nicely described by Bonham and Papke (op. cit.) and their data is used freely from here on. "A northward-trending zone of alteration is intermittently exposed for a distance of over 2 miles on an alluvial-covered slope about 3,000 feet west of the linear front of the mountain range. Pleistocene sediments and Lake Lahontan beds are exposed in trenches, cuts, and pits along the zone. The earlier rocks range from sandstones to fine conglomerates and are altered in all exposures. The Lake Lahontan sediments are silts and sands, with a few gravel layers; they are flat lying and overlie the altered rocks."

"Native sulphur is poorly exposed in a few places along the zone as disseminated particles and small, irregular masses in dark-gray clay, siliceous sinter and opal. Crystalline gypsum is abundant, generally as a one-foot or thicker layer on top of all the altered material. In some places the gypsum overlies the sulphur with a fairly sharp contact. ... The water table appears to be near the surface and may limit the sulphur occurrence to a shallow depth."

As far as is known, Bonham (op. cit.) is the first person to note and write-up the presence of cinnabar in this area. The cinnabar occurs with the sulphur and is also associated with gypsum, opal, chalcedony, quartz, kaolinite, sericite, and other alteration minerals. In places the zone has an exposed width of over 100 feet. Bonham observed cinnabar at two places in the altered zone and a mercury soil anomaly was detected at a third locality.

"The cinnabar occurs as very-fine-grained particles disseminated through both silicified and non-silicified phases of the altered rock, and as encrustations and films coating fractures and open spaces. ... The distribution of the cinnabar appears to be approximately coincident with that of the native sulphur, but there are zones high in sulphur which seem to be low in cinnabar and other areas which contain visible cinnabar and little or no sulphur."

Two pictures, 3 and 4, were taken here and sample #2402 was collected at the more northerly group of trenches.

Bonham and Papke (op. cit.) do not mention the gold occurrence, even though it is shown on their mineral resource map. This prospect lies about a mile north of the northern group of cuts on the sulphur-cinnabar prospect and then about a mile to the east. It is accessible via a fairly good road that is shown on the Kumiva Peak 15 minute topographic map. It is not known what name this property goes by. There are three generations of claim posts in the immediate area, only one of which had any paper on them. This group is known as the S.E.D. claims and is the youngest of the three sets of claim posts. It could not be determined if the old workings are in fact part of the S.E.D. claims. If they are not then they are on the immediate south edge of this claim group. The S.E.D. claims extend north from these workings approximately three miles and cover outcrops of highly iron-stained Tertiary volcanics, most of which are of rhyolitic composition. Sample #2401 was collected at about the center most portion of the claim block, going in a north-south direction.

At the old prospect site there is a tin shack and two adits. One adit is slightly east of the "cabin". It trends N70°E and is approximately 100 feet long. It follows a brecciated quartz vein in metasediments and it appears that Tertiary volcanics make up the contact to the north of the vein. Sample #2403 was collected here. The second adit is west of the

"cabin" a few hundred feet. It trends S45°E and appears to be in metasediments. It may be 200 feet long.

#### REFERENCES

- Bonham, H.F., Jr. and Papke, K.G. (1969) Geology and mineral deposits of Washoe and Storey Counties, Nevada: NBMG Bull. 70, 140 p.
- Olson, R.H. (1964) chp. on sulphur in mineral and water resources of Nevada: NBMG Bull. 65, p. 254-258.