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La Plata District

LOCATION

The La Plata, or Mountain Wells, mining district is located on the eastern slope of the Stillwater Range about 25 miles due east of Fallon. The area of mining activity is concentrated in La Plata and Elevenmile Canyons, eastward draining canyons which lead into Fairview Valley. Access to the mines in La Plata canyon is by good gravel road leading north from U.S. Highway 50 at a point just east of Frenchman Station. The mines in Elevenmile Canyon are reached by a gravel road which turns west from the Dixie Valley road and travels up Elevenmile Canyon. During recent mining exploration in the district, a road has been constructed east from La Plata canyon which connects with Elevenmile Canyon, facilitating access between the two parts of the district. Only the eastern portion of the district, that lying south and east of Black Knob Spring in Elevenmile canyon, is included in the proposed withdrawal area.

HISTORY

Vanderburg (1940, p. 38) summarized the history of the La Plata district as follows: "The La Plata district, discovered in 1862, attained considerable prominence as a boom camp during the middle 1860's, but there is little evidence to show that any appreciable amount of ore was produced. The town of La Plata, established about 1863, was the county seat of Churchill County from 1864 to 1868. In 1863 and several years afterward many claims were located, many which were sold to eastern capitalists, who did considerable prospecting, but the general results were discouraging. The county seat was moved to Stillwater in 1868, and the following year most of the miners deserted the district for the White Pine boom in the eastern part of the State. In 1864, the Silver Wave Mining Co. erected a 10- stamp mill at La Plata at a cost of \$150,000. but little evidence, such as tailings or extensive mine workings, exists to indicate a large production. This mill was removed subsequently to the Ellsworth district in Nye County. Another mill was built in Elevenmile Canyon...about 1864, which was likewise unsuccessful, presumably for lack of ore." The remains of the stone building which housed the 10-stamp mill in La Plata Canyon can still be seen at the old townsite. The site of the old mill in Elevenmile Canyon, southeast of Black Knob Spring, is within the proposed withdrawal area. The site is marked by stone foundations, piles of bricks from walls and old boilers, and fragments of rusting iron and purple glass. Fluorite was discovered in the district in 1939 (Vanderburg, 1940) but there has been no recorded production of that commodity. More recently, several major mining companies have conducted exploration in the district for various commodities. Continental Oil Company did reconnaissance work for copper and molybdenum in La Plata Canyon in 1970, Freeport Exploration and Phelps Dodge Corporation explored for molybdenum between La Plata and Elevenmile Canyons in the early 1980's. Some exploration for tungsten has also been recently done northeast of the old site of La Plata. There is no activity at the present time in this district, but several blocks of mining claims are still maintained.

There is no recorded production from the La Plata district although Schrader (1947, p. 300) reports that several thousand dollars worth of bullion, mainly silver, was produced from the old mines.

GEOLOGIC SETTING

Rocks exposed in the La Plata district range in age from Upper Triassic to Recent and include metasedimentary and metavolcanic rocks which have been intruded by a Tertiary-Cretaceous granitic pluton and at least two younger dike systems. The eastern portion of the district, including the lower reaches of both La Plata and Elevenmile Canyons, is marked by exposures of Tertiary ash-flow tuffs and sediments.

At least two periods of structural deformation are recorded in rock outcrops in the district. The first, associated with a Jurassic-Cretaceous orogeny, involved the juxtaposition of Triassic limestone above autochthonous Triassic phyllite along northeastward-trending thrust plates. Thrusting was followed by the intrusion of the granitic pluton. The younger, Cenozoic, period of deformation involved development of north-south trending folds in Tertiary sedimentary rocks and the onset of high-angle normal faulting. Activity on some of these younger, normal faults continues to the present time. Mineralization in the La Plata district is associated with contact zones and quartz veins related to the granitic bodies and younger aplitic and andesitic dike rocks.

ORE DEPOSITS

Mineral occurrences in the La Plata district can be generally grouped into three broad categories: silver-copper bearing quartz veins developed in shear zones; molybdenum-tungsten-copper bearing skarn zones related to the granitic intrusive and to later aplite and andesite dikes that cut the intrusive rock; and the fluorite deposits in shear zones associated with aplitic dikes and sills. These deposits are all felt to be related both spatially and genetically; all are basically related to the multi-staged intrusive activity within the district. The original discoveries within the La Plata district were of copper- and silver-sulfide bearing quartz veins which cut both the granitic rocks and intruded Triassic metasedimentary rocks. These veins follow mainly northeast trends although some trend north-south and northwest. The veins sometimes form bold outcrops of milk-white bull quartz which contain scant patches of green and blue copper oxide staining formed on clots of oxidizing tetrahedrite and chalcopyrite. These veins are up to several feet thick and locally contain flecks of molybdenite.

The skarn deposits occur along the margins of the irregular-shaped granitic intrusive which cuts the Triassic rocks in the district. The intrusive and Triassic rocks crop out in a northwest-trending band which nearly bisects the Stillwater Range at this point. The major skarn zones, however, trend northeast, paralleling the southeast contact between granite and sedimentary rocks, and north-south, associated with a large pendant of sedimentary rocks in the central part of the intrusive. Aplitic and andesitic dikes cut the contact area along northwest and northeast trends. In many areas, zones of endoskarn within the granitic rock, the silicated border zones of the granitic contacts, the aplite and andesite dikes and their associated zones

of silication all blend into a large zone of fine-grained, silicated rock which has been locally brecciated and silicified. These zones, where also mineralized with trace amounts of molybdenite, chalcopryite, and scheelite, have been the focus of the most recent exploration activity within the district. Exploration for tungsten has been confined to skarn zones northeast of the old La Plata townsite, east of La Plata Canyon. Molybdenum-copper exploration has occurred in a broad, east-west trending area extending from La Plata into Elevenmile Canyon with the area of highest interest being located south and east of Black Knob Spring. Here, an area of greisen (a muscovite-rich, brecciated, kaolinized granitic rock as described by Phelps Dodge Corp.) and skarn was sampled and drilled.

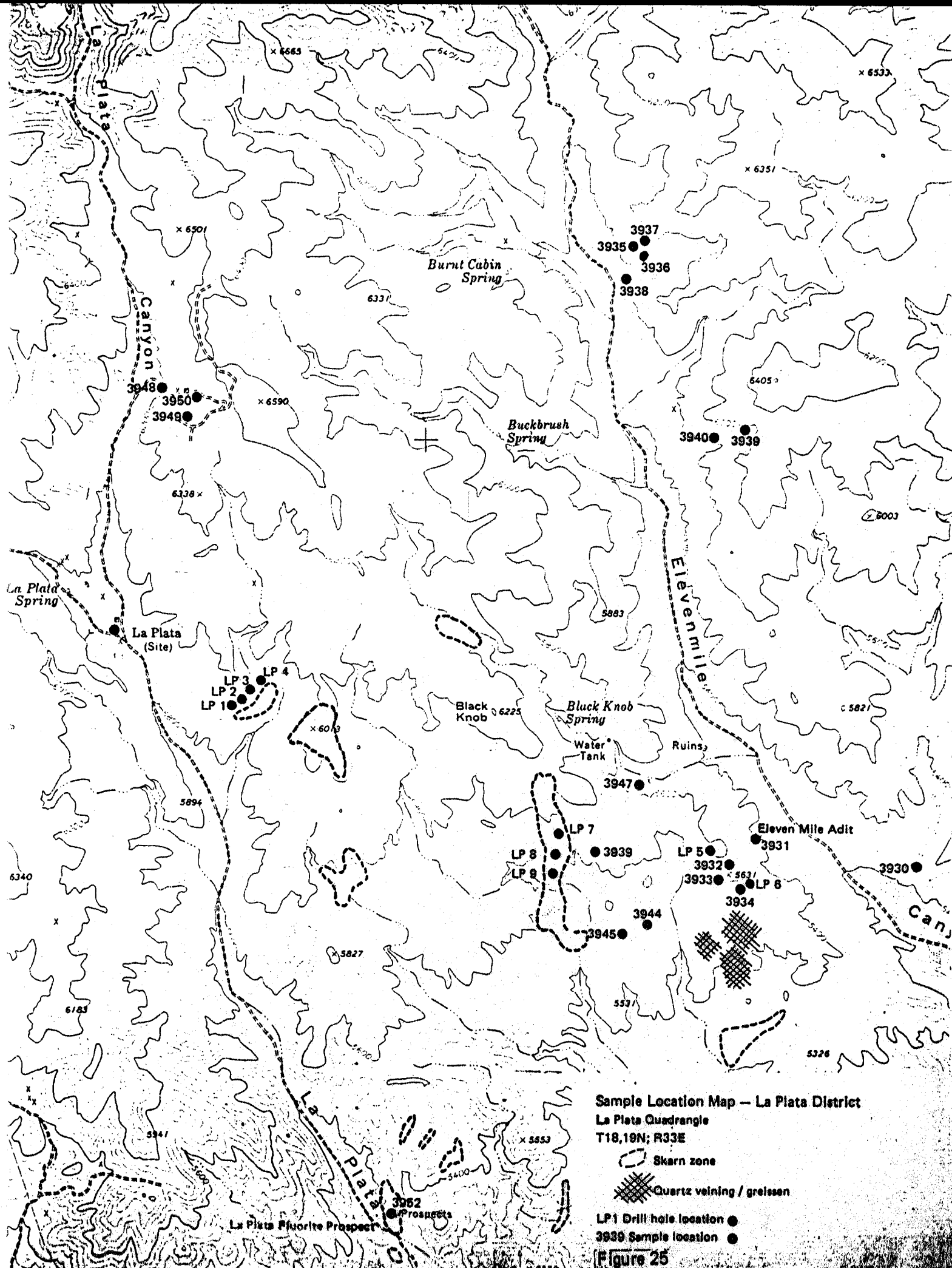
A small fluorite deposit has been explored on the east side of La Plata Canyon about two miles southeast of La Plata. The workings explore irregular contact zones adjacent to aplite sills and dikes that cut phyllite and limestone. The fluorite occurs as small masses and veinlets along the contact. A considerable amount of trenching has been done here, but there is no recorded fluorite production.

PROPERTIES WITHIN OR ADJACENT TO PROPOSED WITHDRAWAL AREA

Elevenmile Adit: The largest mine working in Elevenmile Canyon was given the name Elevenmile adit on maps prepared by Phelps Dodge Corp. during their work in the area. This adit was driven in felsite near a granite contact; the adit is caved and the geologic relationships in the workings could not be seen. In the hills to the southwest of the adit, however, several old workings expose narrow, near-vertical, northeast-trending quartz veins containing minor amounts of tetrahedrite, chalcopryite, and molybdenite. These veins project toward the Elevenmile adit and may have been intersected by it underground.

La Plata Molybdenum Project: This project involved a large block of ground extending from La Plata Canyon to Elevenmile Canyon; only that portion of it south and east of Black Knob Spring is within the proposed withdrawal area. This area was explored for bulk-tonnage molybdenum first by Freeport Exploration then by Phelps Dodge Corporation. Work by Phelps Dodge included geologic mapping, geochemical sampling, and rotary drilling (fig. 25). Three drill holes were just outside of the western boundary of the withdrawal area, two were within it. Exploration was not successful in finding mineable ore within the project area. The areas to the northeast and southeast of the project area, on strike of both the district vein trends and the intrusive-sedimentary rock contact trend, are covered by post-ore volcanic rocks and sediments; mineralization could extend into the proposed withdrawal area along either of these favorable trends.

One Mile Claims: At this location, along the western boundary of the withdrawal area about 1 3/4 miles north of the Elevenmile adit, several old workings explore narrow quartz veins in shear zones cutting andesite. The exposures are poor; individual veins were noted which strike northwest, northeast, and north-south. Gold values were obtained from two samples, however, and the area may have potential as a gold prospect. Projection of either a northeast- or a northwest (to the southeast)- striking structure would extend into the withdrawal area.



Sample Location Map — La Plata District
 La Plata Quadrangle
 T18,19N; R33E

○ Skarn zone
 ▨ Quartz veining / greissens

● LP1 Drill hole location
 ● 3939 Sample location

Figure 25

GEOCHEMICAL RELATIONSHIPS

Most of the mineralized samples collected within the La Plata district (figs. 25, 26) displayed element associations to be expected in the mesothermal vein, skarn setting. Moderate to high values in silver were associated with high copper, antimony, and moderate lead and zinc. High bismuth values were present along with locally high manganese values in the skarn samples. Moderate to high molybdenum was present in about half of the samples from the district; tin was present in three samples. Gold was detected in only three samples; two of these were from the same prospect on the eastern margin of the district.

SELECTED REFERENCES

- Butler, R. S. (1979) Geology of La Plata Canyon, Stillwater Range, Nevada: M.S. thesis, University of Nevada, Reno.
- Lincoln, F. C. (1923) Mining districts and mineral resources of Nevada: Nevada Newsletter Publishing Co., Reno.
- Page, B. M. (1965) Preliminary geologic map of a part of the Stillwater range, Churchill County, Nevada: Nevada Bureau of Mines and Geology Map 28.
- Papke, K. G. (1979) Fluorspar in Nevada: Nevada Bureau of Mines and Geology Bull. 93.
- Schrader, F. C. (1947) Carson Sink area, Nevada: U.S. Geological Survey Open file report.
- Vanderburg, W. O. (1940) Reconnaissance of mining districts in Churchill County, Nevada: U.S. Bureau of Mines Information Circular 7093.
- Willden, R, and Speed, R. C. (1974) Geology and mineral deposits of Churchill County, Nevada: Nevada Bureau of Mines and Geology Bull. 83.

