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Item 3

4560 0003

Investigation of the Clipper Gap Pluton

Lander-Nye County, Nevada

by J. V. Tingley

Introduction:

Investigation of the mineral potential of the Clipper Gap pluton was undertaken as part of the work to be performed under Contract Number DE-A508-79NV10058, Department of Energy, titled "Potential Mineral Occurrences on Nevada Lands Being Investigated for Possible Use in Nuclear Waste Storage". Work consisted of a review of geologic literature pertaining to the area, compilation of information concerning individual mineral occurrences onto standard Nevada CRIB forms, investigation of land status and mineral claim activity, and reconnaissance field examinations of selected areas.

Location:

The Clipper Gap pluton is located on the western slope of the northern Toquima range in central Nevada. The area under investigation lies astride the Lander-Nye County line on the east side of Big Smoky Valley about 25 miles southeast of Austin and about 90 miles northeast of Tonopah.

The Clipper Gap area is generally included within the Spencer Hot Springs mining district, although the center of the district is about ten miles to the north. The Northumberland gold-barite district is on the crest and eastern slope of the Toquima range approximately ten miles south of Clipper Gap. All of the area of investigation is within the Wildcat Peak 1:62,500 scale topographic quadrangle map.

Mining History and Production:

No records of past mining activity within the Clipper Gap area were uncovered during this study. An old stone cabin located in the central drainage basin within the Clipper Gap intrusive outcrop has the appearance of an 1880's to

1900 vintage structure, and old mine workings found south of the cabin probably date back to that time. These mine workings are not extensive, however, and no record of production could be found.

A more recent claim notice, dated March 4, 1940, was found on one of the mine dumps, but it does not appear that any mining was done then, and there has been no activity since that time.

Land Status:

Essentially all of the Clipper Gap study area is within the Toiyabe National Forest, and is managed by the U.S. Forest Service. The boundary between Forest Service lands and lands managed by the Bureau of Land Management lies one to two miles west of the western-most Clipper Gap pluton outcrops, and generally follows the boundary between Big Smoky Valley and the adjacent Toquima Range.

At the time land records covering Clipper Gap were checked (1979), no valid mining claims were on record within the intrusive areas.

General Geology:

The geology of the Clipper Gap area is described by McKee (1976) and Stewart and McKee (1977). The following description, taken from Stewart and McKee (1977), summarizes the important geologic features of the area.

The Clipper Gap pluton crops out over approximately 5 square miles on the west flank of the Toquima Range. The contact of the granitic rock is with Paleozoic western facies strata, and is sharp and steep. Contact metamorphism and satellitic dikes of aplite and diorite are pronounced features within a narrow zone near the intrusive contact. A few pendants in the pluton seem to be generally aligned with the main intrusive contact.

The pluton is composed mostly of fine- to medium-grained biotite quartz monzonite and smaller amounts of granodiorite and granite; alaskite dikes are a

crosscutting phase. A potassium-argon age determination on biotite from this pluton is about 150 m.y. (Silberman and McKee, 1971), suggesting a Middle Jurassic age for the pluton. To the south, the intrusive is in contact with Tertiary ash flow tuffs of the Bates Mountain and Hoodoo Canyon formations.

Mineralization:

Mineralization within the Clipper Gap pluton appears to be confined to north-south, and northwest-trending shear zones associated with aplite and felsite dikes which cross-cut the main intrusive. In one locality, east of the stone cabin in the center of the pluton, stringers of quartz and black tourmaline follow a N10°W, vertical shear zone within aplitic rock. Clusters and sunbursts of radiating, black tourmaline crystals give the aplite a mottled appearance. To the east and up drainage from the tourmaline-quartz occurrence, several old shafts and adits explore a north-south, vertical quartz vein which cuts the intrusive rock. The vein is 2 to 5 feet wide, and is composed of banded, vuggy white quartz. Clots of partially altered pyrite, chalcopyrite and tetrahedrite(?) are scattered throughout the vein material, and green and blue secondary copper minerals stain most of the white quartz. The vein can be traced for several hundred feet along strike to the south. The granitic wall rock near the vein is not altered, but the structure followed by the vein is well-defined and strong. One sample, selected from high-grade pile of dump rock contained over one ounce of gold per ton and over 5 ounces per ton of silver. The copper content was in excess of 4%. If a moderate amount of ore of this nature could be developed at this locality, metal values in these ranges in a quartz ore could be directly shipped to a copper smelter.

One other area, Iron Spring near Willow Canyon south of the Clipper Gap pluton, was field examined. The topographic map indicated several prospects to be present at that location. Field examination revealed areas of iron staining in welded

tuffs and some old claim posts, but no workings or pits were found. One claim, the Rifle, was dated 1952, indicating the area may have been prospected during the uranium rush of the early 1950's.

Summary and Conclusions:

Mining activity in the Clipper Gap area has not been intense. Prospecting of the quartz vein occurrences within the main intrusive area probably dates back to the late 1800's, and little activity has occurred since that time. The area is somewhat remote and access to it is poor. These factors may have limited interest in the past. Mineral exploration is presently at a very high level in this part of Nevada, however, and Clipper Gap will no doubt receive its share of attention.

Selected Bibliography:

McKee, Edwin H. (1976) Geology of the Northern Part of the Toquima Range, Lander, Eureka, and Nye Counties, Nevada, U.S.G.S. Prof. Paper 931.

Stewart, John H., and McKee, Edwin H. (1977) Geology and Mineral Deposits of Lander County, Nevada, NBMG Bulletin 88.

Kleinhampl, Frank J. (1980) Mineral Occurrences in Northern Nye County, Nevada, U.S.G.S. Open File report.

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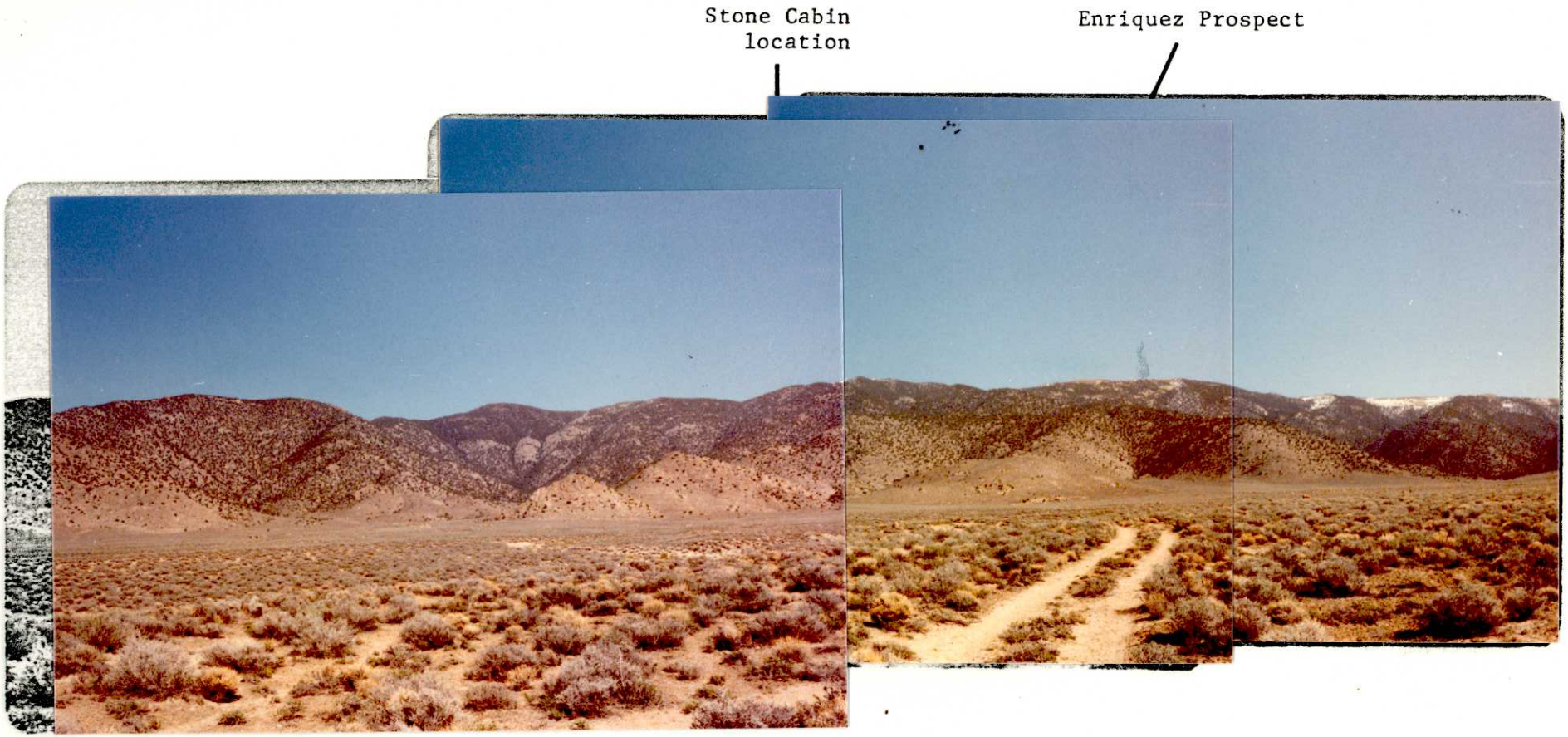
May 27, 1980

MEMORANDUM

TO: J. Tingley
FROM: P. Beaulieu PB
SUBJECT: DOE 704 Clipper Gap

Results of Analyses

Au (Fire Assay)	1.120	oz/T
Ag (Fire Assay)	5.23	oz/T
Cu (Atomic Absorption)	4.69	%
Mo (Colorimetry)	4.3	ppm



Panoramic View, Clipper Gap Pluton, looking east.