

PRELIMINARY REPORT ON THE MOLYBDENUM POTENTIAL OF THE QUARTZ MOUNTAIN MINING DISTRICT, NYE AND MINERAL COUNTIES, NEVADA

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ABSTRACT

Quartz-molybdenite veinlets in altered porphyritic rocks have been discovered on shaft dumps in the old Quartz Mountain lead-silver district. This combination of mineralization and rock type, which does not crop out in the district, is suggestive of a concealed stockwork molybdenum ore deposit, and alteration gradients observed on the surface suggest that it could lie northwest of Quartz Mountain, in the vicinity of the Calico shaft. An induced polarization (I.P.) survey and drilling are suggested to test this hypothesis.

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LOCATION

The Quartz Mountain Mining District is located in the SW/4 of T. 14 N. R. 36 E. (unsurveyed), Nye County, with a small portion in Mineral County. It is about 13 miles north of Gabbs, and is accessible by five miles of graded road, easterly from Nevada Hwy. 23. Mean elevation is 5300 feet, and the topography is gentle.

GEOLOGY

Descriptions of the district appear in Schrader (U.S. Geol. Survey Open File Report, Carson Sink Area, 1947) and Kral (U. Nev. Bull, Vol. XLV, No. 3, 1951); Kral repeats much of Schrader's data. Schrader (p. 118-122) reports that Triassic limestone and greenstone, the oldest rocks in the area, are intruded by granodiorite porphyry and related intrusives of probable Jurassic or Cretaceous age. These rocks are overlain by Tertiary volcanic rocks, ranging in composition from rhyolite to andesite.

My work at Quartz Mountain suggests that Schrader's descriptions are, in part, in error. Quartz Mountain, the low hill on which most of the mines and prospects are located, is underlain by quartzite, quartz siltstone, hornfels, and minor limestone, and these rocks are intruded by a siliceous, multiphase granitic stock (ranging from quartz monzonite to alaskite) and by later dikes of quartz-sericite altered quartz feldspar porphyry and rhyolite porphyry. The Quartz Mountain intrusive rocks, particularly some seen on dumps of the deeper shafts but not in outcrop, are very similar to the intrusive suite at Anaconda's Hall molybdenum deposit, in the San Antonio Mountains about 50 miles to the southeast.

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MINERAL DEPOSITS

Two types of deposits, both predominantly oxidized, have been mined at Quartz Mountain, according to Schrader. The most productive have been Mesozoic (?) lead-silver fissure veins and replacement bodies in limestone and quartzite; ore minerals are cerussite and argentiferous galena. The principal deposits of this type are in and related to the "Lease vein", which strikes N 40° W and dips 25° NE, in the San Rafael mine. Smaller production has come from Tertiary (?) epithermal lead-silver-gold veins which cut both the older sediments and intrusives and the Tertiary volcanic rocks. These ore minerals are cerussite, argentiferous galena, argentite, cerargyrite, and gold. The "Vertical vein" at Quartz Mountain is of this type, and cuts off the Lease vein on the 350 level of the San Rafael.

The San Rafael mine was discovered in 1920, and, according to Schrader, had produced \$340,000 by the mid 1930's. It is developed by a 40° incline shaft and 2000 feet of laterals, to a depth of 450 feet. Other mines in the district have had smaller or no production.

MOLYBDENUM POTENTIAL

The present interest was prompted by the discovery of molybdenite-bearing quartz veins and intrusive rocks on two dumps, the Calico shaft just northwest of Quartz Mountain and the Quartz Mountain Metals shaft at the south end of the ridge.

On the Calico dump, quartz-molybdenite veinlets cut quartz-feldspar porphyry with strong quartz-sericite alteration; the molybdenite occurs as tiny flakes disseminated in the veinlets and as flakes and seams on the veinlet margins. On the Quartz Mountain Metals dump, molybdenite occurs in quartz veins and seams in alaskite and porphyry, and some showy specimens have been collected. Sparse wulfenite occurs on the dump of the San Rafael incline. Other dumps have not been examined in great detail, but molybdenite could be expected also to occur on the Hasbrouck dump; the Hasbrouck shaft is reported to be 320 feet deep, and rhyolite breccia, rhyolite porphyry, and alaskite are present on the dump. The Hasbrouck is the only vertical shaft thought to be accessible, but I have not been down it. Schrader reports a wide mineralized zone on an aplite-limestone contact, containing galena and up to 5% copper, in the Hasbrouck.

The molybdenum mineralization at Quartz Mountain is very subtle; it is not reported in any published source, and was unknown to the Nevada Bureau of Mines. It was discovered only through breaking rocks on dumps, and the favorable rhyolite or quartz-feldspar porphyry or breccia do not crop out. These rocks, and the quartz-molybdenum veins, suggest good potential for discovery of a stockwork molybdenum deposit, possibly similar to the Hall deposit, concealed beneath alluvium and post-mineral volcanics. The lead-silver vein deposits may be peripheral mineralization zoned around a central molybdenite-rich ore shell.

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The deposit may be genetically and spatially related to a concealed quartz-feldspar or rhyolite porphyry or alaskite stock, dikes of which are cut by workings in the Calico and Quartz Mountain Metals shafts.

Preliminary field work indicates that hydrothermal alteration in the exposed rocks on Quartz Mountain ridge increases toward the north and west sides of the ridge, suggesting that the area in the northwest sector, in the vicinity of the Calico shaft, might be most favorable for discovery of a concealed deposit.

Depth is problematical; several hundred feet of post-mineral cover may be present in the favorable area, and the actual ore shell could be considerably deeper. Molybdenum ore shells are characterized by very steep assay gradients, and, although geochemical analysis of drill core might suggest economic mineralization from some distance away, the transition from trace content to ore might occur over only a few tens of feet.

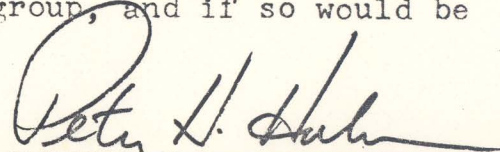
Careful geophysical work with sensitive Induced Polarization (I.P.) equipment might lend much support to this target concept and aid in locating drill holes. Many molybdenum deposits have high-quartz, low-pyrite cores, surrounded by high-pyrite halos; I.P. might show a ring-shaped sulfide response, and this type of anomaly would be very suggestive of a stockwork molybdenum deposit.

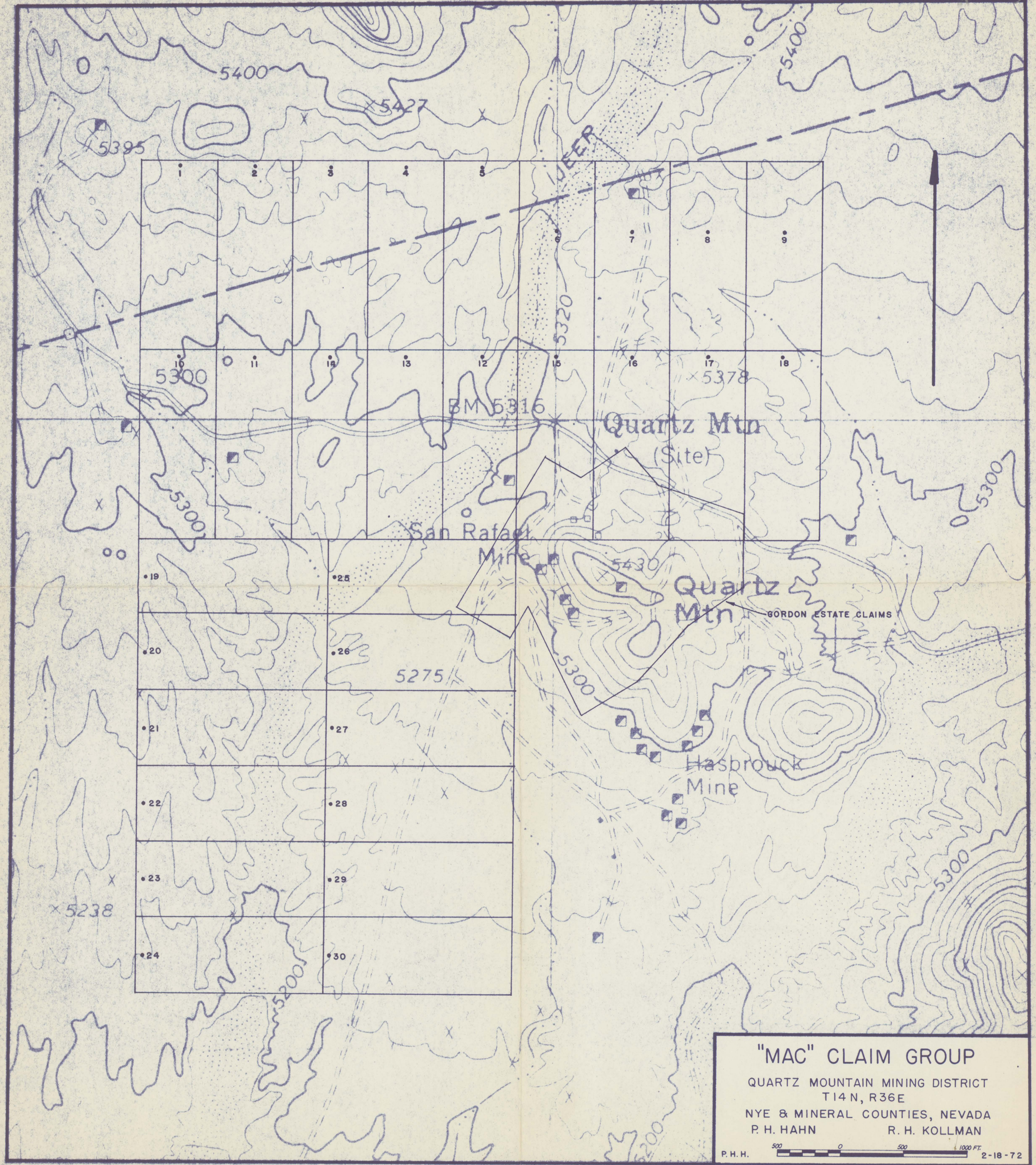
LAND SITUATION

No patented claims exist at Quartz Mountain, and all land in the area is public domain open for staking. I have considerable information from the Nye County records, but briefly, the following claims are believed to be the only valid ones:

- A. Five unpatented claims (Min. Survey 4650) cover the San Rafael mine area, held by the L. D. Gordon estate (Reno?).
- B. Thirty unpatented claims cover the alluvial and volcanic covered area north, northwest, and west of Quartz Mountain, including the area believed to have the best potential for discovery of a concealed molybdenum deposit. These claims are held by Ronald H. Kollman, Reno, and myself.
- C. Eleven "floating" unpatented claims are vaguely described as "in Quartz Mountain district", but are believed to overlap much of the Gordon group (A.) and may be partly invalid. They are held by O. Warner, A. Mobley, D. Barker, and R. J. Maret, of Hawthorne and Gabbs.
- D. The San Rafael unpatented claim, held by J. Zlokovich, Reno, is believed to overlap the Gordon group, and if so would be invalid.

14 February 1972


Peter H. Hahn

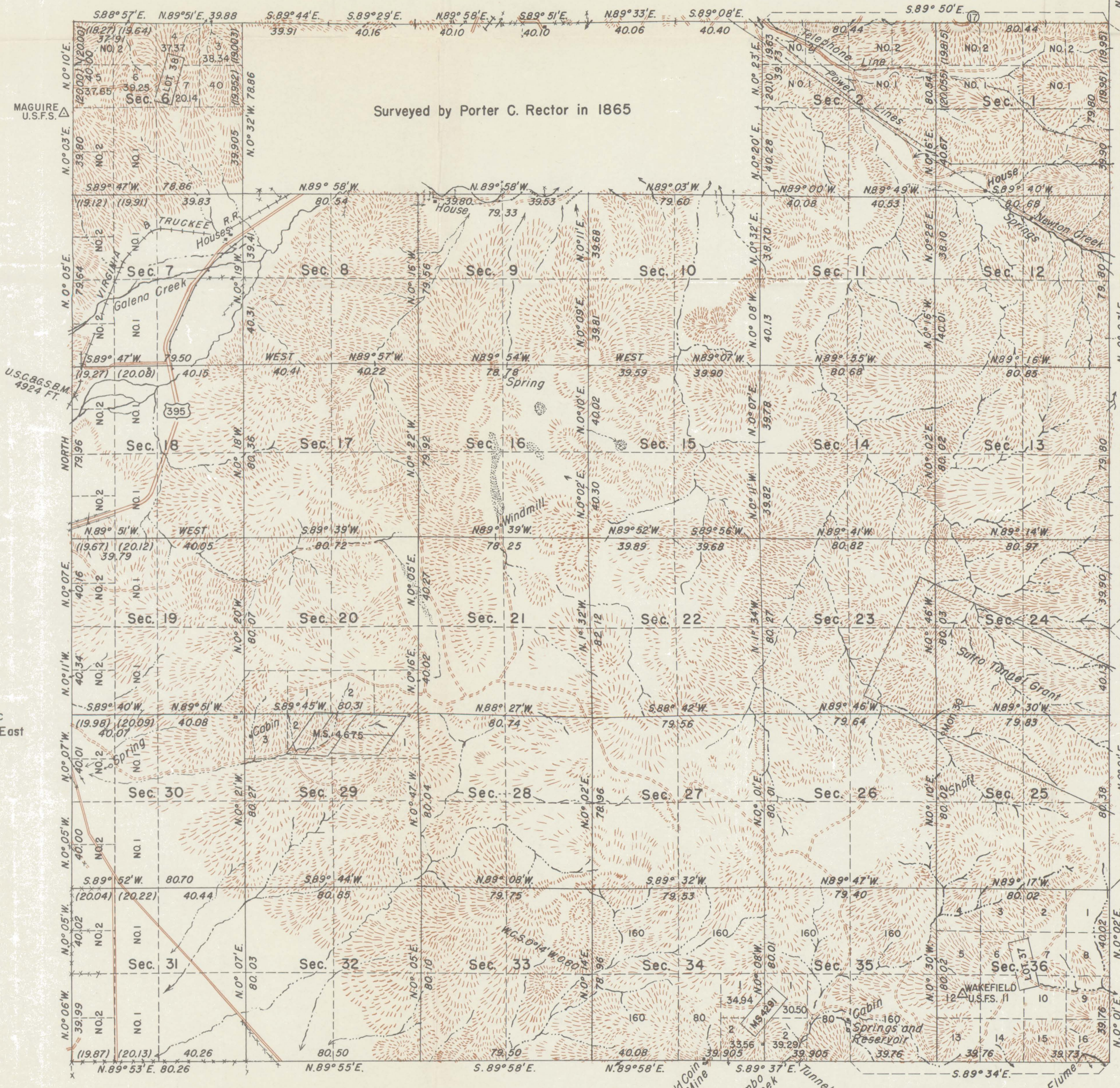


"MAC" CLAIM GROUP

QUARTZ MOUNTAIN MINING DISTRICT
T14N, R36E

NYE & MINERAL COUNTIES, NEVADA
P. H. HAHN R. H. KOLLMAN

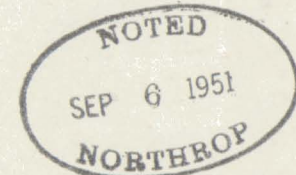
TOWNSHIP 17 NORTH, RANGE 20 EAST, OF THE MOUNT DIABLO MERIDIAN, NEVADA DEPENDENT RESURVEY



PATENTED MINERAL SURVEYS

Lot	No.	37 NORRIE MINE
"	"	38 GALENA HILL LODE
Survey	No.	4291 BARGO LODE
"	"	4675 ETHEL NO. 1 LODE
"	"	" 2 "
"	"	" 3 "
"	"	" 4 "

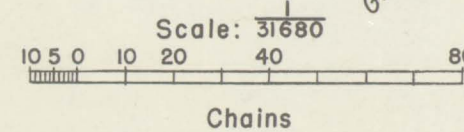
This plat represents a retracement and re-establishment of portions of the original township boundary and subdivisional lines designed to restore the corners in their original locations according to the best available evidence. The lottings and areas are as shown on the plats approved July 6, 1875 and December 13, 1934, except where new areas are shown hereon.



Latitude 39° 17' 17" N
Longitude 119° 40' 36" W

West boundary resurveyed by Carl S. Swanholm November 12, 1937 to July 5, 1944 under special instructions for Groups 156 and 332 dated March 22, 1937 and June 27, 1941.

South, East and North boundaries and a portion of the subdivisional lines resurveyed by Quintin Campbell and James W. Hardison May 18 to September 2, 1947, under special instructions for Group 343 Nevada, dated July 12, 1942.



Area Resurveyed	
Area of Segregation	140.19 Acres
Area exclusive of Segregation	20,946.22 Acres
Total	21,086.41 Acres

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Washington, D. C., April 12, 1951

This plat is strictly conformable to the approved field notes, and the survey, having been correctly executed in accordance with the requirements of law and the regulations of this Bureau, is hereby accepted.

For the Director

William F. Richards

Chief, Branch of Surveys



6000 OASg (3890)