

**GEOLOGICAL SURVEY OF WYOMING**

ECONOMIC GEOLOGY OF THE GOLD NUGGET MINERALIZED  
AREA, COPPER MOUNTAIN, WYOMING

by

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## Introduction

The Gold Nugget mineralized area lies near the western edge of the Copper Mountain metamorphic complex. Several mines and prospects were developed in the Gold Nugget region near the turn of the 20th century in order to test for economic gold and copper deposits. Some interest in iron ore has been expressed in past years, although the exposed iron-formations at Copper Mountain are low-grade and the units are fairly thin (Millgate and Gliozzi, 1966).

The Copper Mountain metamorphic complex consists of almandine-amphibolite metamorphosed pelitic sediments and amphibolites that form a steeply dipping high-grade metamorphosed terrain (Hausel and Graff, 1983). In the vicinity of Gold Nugget, these metasedimentary units dip steeply to the south.

Rock types commonly encountered in the Gold Nugget mineralized area include micaceous quartzite (often fuchsitic), muscovite schist, quartzofeldspathic gneiss, quartz biotite schist, thin bedded amphibolites (para-amphibolites?), porphyroblastic amphibolites (qtz amphibolites), muscovite granite and related pegmatites.

The area of interest occurs along Birdseye Creek of the Birdseye Pass 7½-minute quadrangle.

Gold Nugget Mine; SE/4 SE/4 Sec. 11, T.40N., R.94W.; The Gold Nugget Mine was the most extensively developed property in the mineralized

region. The property was developed by an adit at the southern edge of the Gold Nugget vein which trended northeasterly and intersected two ventilation shafts. Along the northern extent of the vein, is a small open cut. In all, it was reported that the mine contained 1,190 feet of workings and reached a depth of at least 400 feet. A stamp mill was constructed to the south to process ore from the Gold Nugget Mine and adjacent properties (Hausel, 1982).

The Gold Nugget vein is stratiform within the host muscovite schist. Exposures show that the vein forms sharp contacts with the host schist and evidence of alteration is minor. Only some restricted chloritization and epidotization, was observed in the adjacent host rock. The vein trends N56<sup>0</sup>E and dips 33<sup>0</sup>SE and crops out over a distance of approximately 550 feet. Most exposures suggest that the vein averages 2 feet in width. To the north and to the south, the vein terminates against the late intruding muscovite granite, however, the vein may continue along its northern edge in the vicinity of the section line dividing sections 11 and 12 (Figure GN-1). At this point, the dip of the vein increases by about 30 degrees.

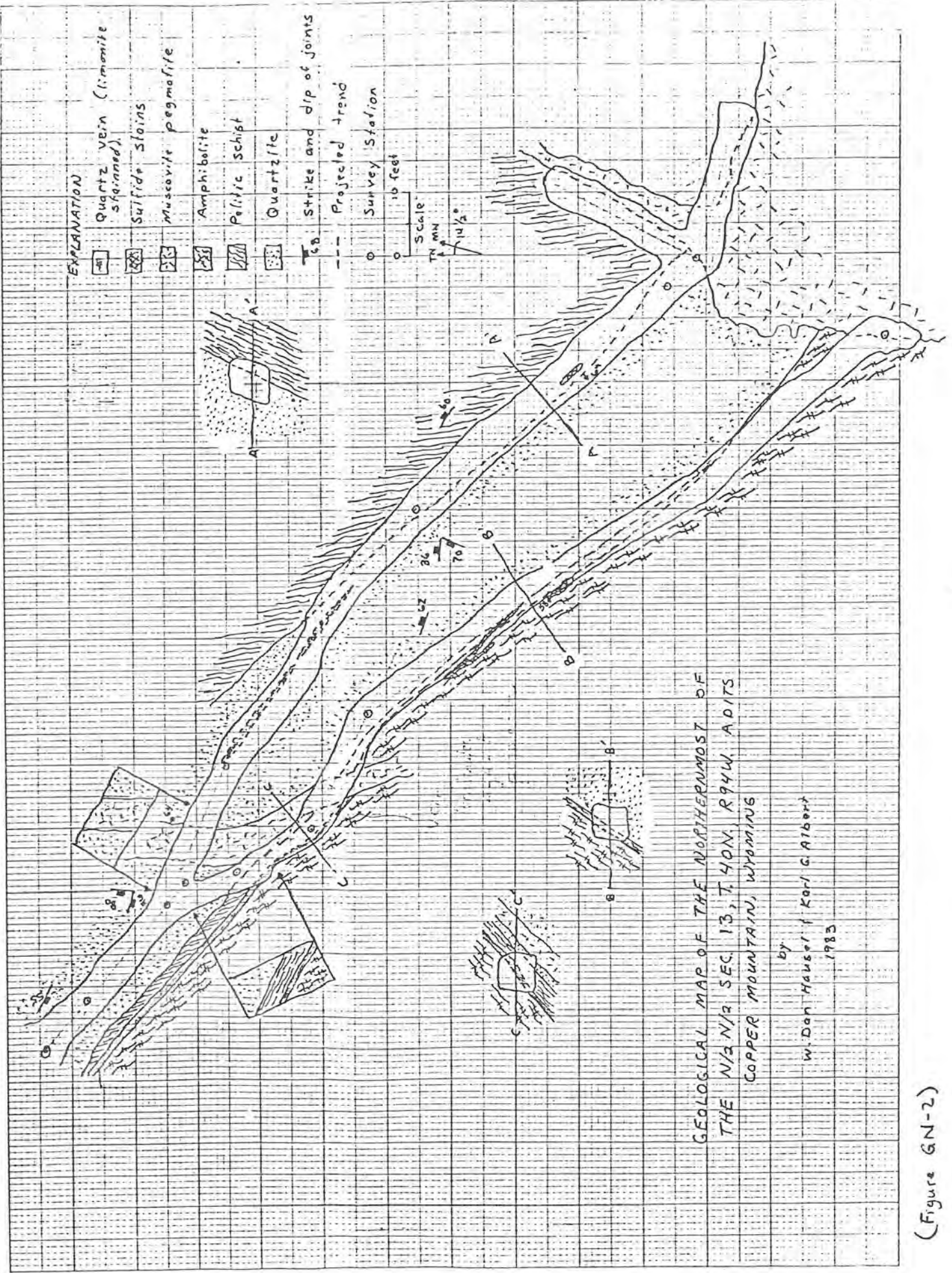
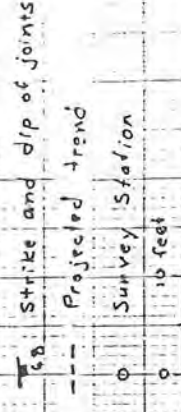
Bregy (1935) indicated that 1,700 tons of gold ore had been mined from the Gold Nugget property by the time of the writing of his report. It was also reported that 16,500 tons of ore reserves averaging 0.42 ounces of gold per ton had been blocked out with another 14,000 tons of gold resources indicated. Samples collected from the mine workings ranged from a trace to 2.37 ounces of gold per ton. Recent grab samples

(2-N-9 angle)

GEOLOGICAL MAP OF THE NORTHERNMOST OF  
SUNNIDON MOUNTAIN WYOMING  
THE N/2 N/4 SEC. 13, T. 40N. R. 94W. ADITS

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- EXPLANATION
- Quartz vein (limonite stained)
  - Sulfide stains
  - Muscovite pegmatite
  - Amphibolite
  - Pelitic schist
  - Quartzite
  - Strike and dip of joints
  - Projected trend
  - Survey Station



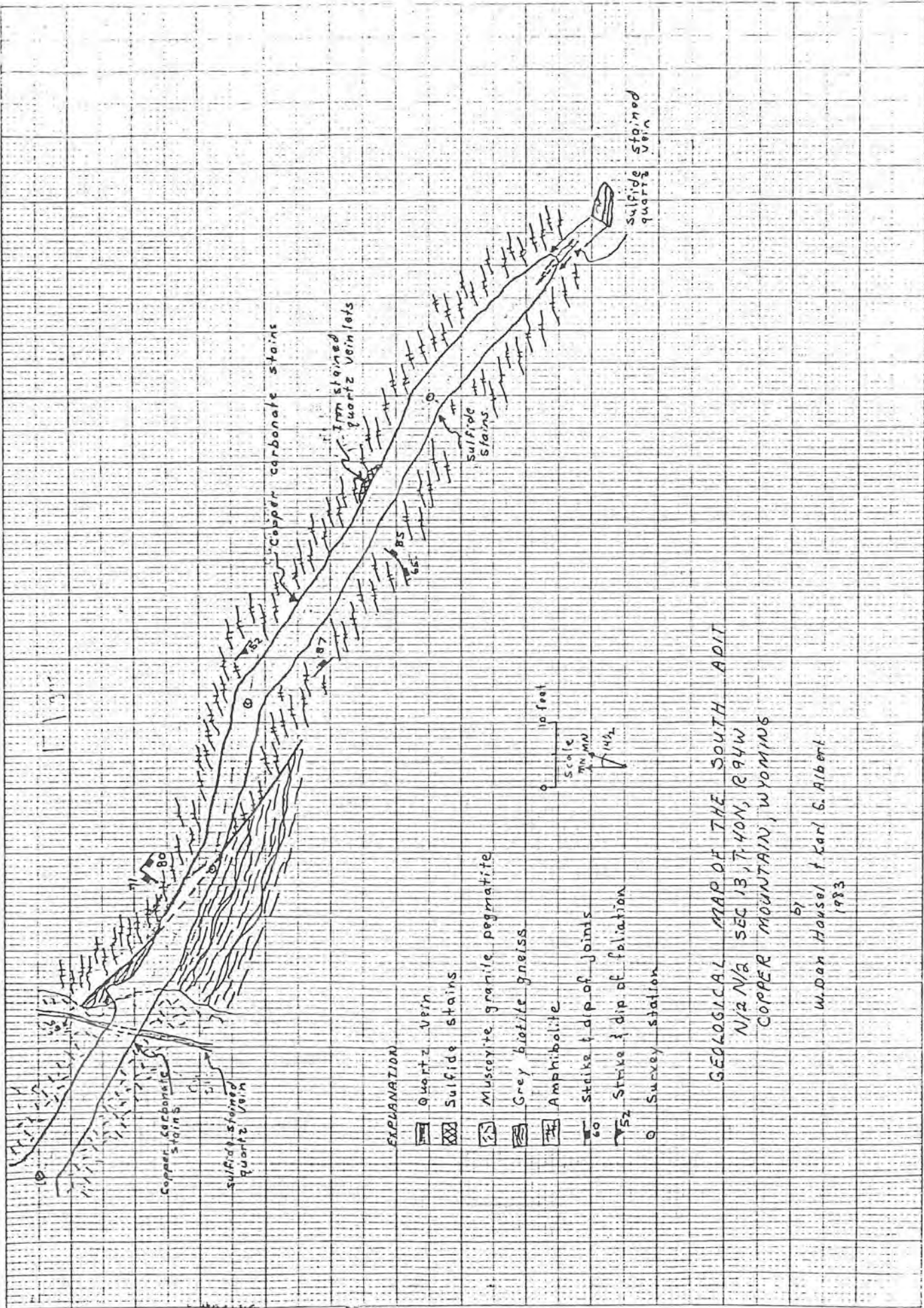
collected from the Gold Nugget Mine and adjacent properties assayed only a trace in gold. The highest assay was only 0.02 ounces of gold per ton (Hausel, 1981).

Section 13 North Adit; N/2 N/2 NE/4 NW/4, sec. 13, T.40N., R.94W.; More than 350 feet of drifts were developed into a massive quartzite along a S50°E trend (Figure GN-2). The quartzite exposed at the mine entrance is massive and suggestive of some silica remobilization. At 30 feet into the mine, the drift splits into two tunnels. The northern tunnel trends along a 64°SW dipping quartzite-pelitic schist contact, and the southern tunnel trends along a 58°SW dipping quartzite-pelitic schist-amphibolite contact. The southern tunnel intersected a small one-to two foot wide limonite-stained quartz vein. Both drifts terminated against a muscovite granite pegmatite. In general, very little mineralization was observed.

A selected sample of limonite-stained quartz vein material with boxworks was collected from the mine dump for assay. The sample (no. GNM-1-83) assayed 0.77 ounces of gold per ton (Table GN-1).

Section 13 South Adit; N/2 N/2 NE/4 NW/4 Sec. 13, T.40N., R.94W.; This adit lies a few hundred feet down drainage from the Section 13 North Adit. The mine was developed in muscovite granite pegmatite along a S60°E trend for 160 feet (Figure GN-3). At 25 feet into the tunnel, the drift intersected a narrow one foot wide cupriferous and

sulfide stained quartz vein which trends  $N12^{\circ}E$  and dips  $65^{\circ}NW$ .  
At 32 feet in the mine, the workings intersected a grey quartzo-  
feldspathic gneiss and approximately at 50 feet, the workings  
intersected a contact between the gneiss and amphibolite. The  
mine terminated in the amphibolite with very little indication of  
mineralization.



(3-NB enlig)

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## REPORT OF ANALYSIS

Customer ID	Lab No.	sec. 13 Gold Nugget #GNM-1-83 7/31/83 A1689	Hub Mine HBM-1-83 7/27/83 A1690	#McGraw #1 Shaft 8/2/83 A1691 Cu-stained vein	#McGraw #2 Shaft 8/2/83 A1692 Cu-stained vein
Gold oz/ton		0.77	<0.01	<0.01	0.04
Copper mg/kg		----	----	2910	1180
Silver oz/ton		----	----	<0.01	<0.01

GNM-1-83 Quartz vein sample containing some pyrite and limonite stains.  
Dump sample from northern mine dump sec. 13, T. 40N, R. 94W.

HBM-1-83 Hub mine quartz vein sample containing abundant Chalcopyrite  
Hub mine is located in Sierra Madre Range

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