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STATE OF ALASKA
DIVISION OF MINES AND MINERALS

PE 60-11

REPORT ON THE EXAMINATION OF THE MITCHELL COPPER PROSPECT,
EAGLE QUADRANGLE

by

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INTRODUCTION

The Mitchell copper prospect is in the southwestern part of the Eagle quadrangle at $64^{\circ} 06'$ N latitude and $143^{\circ} 02'$ W longitude. It is at 4200 feet altitude on the end of the ridge on the west side of Copper Creek, tributary to Kechumstuk Creek, tributary to Mosquito Fork of Forty-mile River. The nearest road and nearest airstrip are at Chicken, 30 airline miles east of the prospect. Plate I is a map of the vicinity. The prospect is covered by a group of unpatented claims that are owned by Mr. John Hajdukovich, Delta Junction, Alaska; the claims are recorded at Fairbanks.

The prospect was examined on August 5, 1961, by George Moerlein, Geologist, Bear Creek Mining Company, and Robert H. Saunders, State Mining Engineer, Division of Mines and Minerals.

GEOLOGY

The geology of the region in which the prospect lies has been described in U. S. Geological Survey Bulletin 872, THE YUKON-TANANA REGION, ALASKA, by J. B. Mertie, Jr. The rock underlying most of the area drained by Copper Creek and the other headwater tributaries to Kechumstuk Creek is part of a large batholith of granitic rock considered to be of Mesozoic age. The rocks surrounding the batholith are members of the Birch Creek schist formation, a metamorphic complex considered to be of pre-Cambrian age. The prospect lies within what appears to be a roof pendant of Birch Creek schist within the batholith. Bedrock exposures in pits, trenches, and outcrops indicate that the body of schist is at least 2400 feet long in its longest dimension, which is parallel to the trend of the vein.

MINERAL DEPOSITS

Several bulldozer trenches and a few small pits that have been dug on the claims are shown on plate II. Around the pits much of the bedrock is covered by soil and vegetation, but, in some places, rock rubble or coarse, blocky talus provides a clue to the character of the underlying bedrock.

The mineral deposit is a quartz-borniteschalcopyrite vein. The best exposure of the vein is in the pit where sample 9 was taken. At that place, the vein is 5 feet wide, and it strikes $N 75^{\circ} E$ and dips $55^{\circ} S$. In the bulldozer trench 20 feet west of the pit where sample 9 was taken and in the trench where sample 8 was taken, the vein is not exposed in place, but several pieces of vein material are scattered over the bottoms of the trenches as though they had been pushed along by a bulldozer blade. In a bulldozer trench 225 feet northeast of the pit where sample 9 was taken, a one-footwide band of earthy material composed largely of malachite is exposed. The band of malachite lies north of the projected line of strike of the vein, but a bend in the vein or a fault could account for its location. The trench extends to the south well beyond the projected line of strike of the vein, but no other signs of mineralization are evident in the trench.

Sample 10 was taken to check the gold and silver content of an iron-stained quartz vein that is exposed in a hand-dug trench northeast of the copper showings. This vein strikes approximately north; its dip is apparently nearly vertical. No copper minerals are visible in the vein material.

Table 1 shows the assay results of three samples that were taken during the examination, and table 2 shows the results of spectroscopic analyses of samples 8 and 9. The assays and analyses were made by Donald R. Stein, Assayer, Division of Mines and Minerals, College.

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Table 1. Assays of Samples

| Sample Number | Length of Channel | Ounces per Ton Gold | Ounces per Ton Silver | Per Cent Copper |
|---------------|-------------------|---------------------|-----------------------|-----------------|
| 8 | Grab | 0.04 | 79.98 | 19.61 |
| 9 | 5 feet | trace | 0.84 | 1.93 |
| 10 | Grab | trace | 0.60 | Not Run |

Table 2. Spectroscopic Analyses

| Over 10 Per Cent | 1 to 10 Per Cent | Under 1 Per Cent |
|------------------|------------------|------------------------|
| | Sample 8 | |
| copper | calcium | molybdenum 0.2 to 0.3% |
| iron | sodium | nickel ? |
| silica | magnesium | silver |
| | zinc 1% | |
| | lead | |
| | Sample 9 | |
| calcium | iron | zinc |
| silica | copper | manganese |
| | sodium | chromium |
| | magnesium | |

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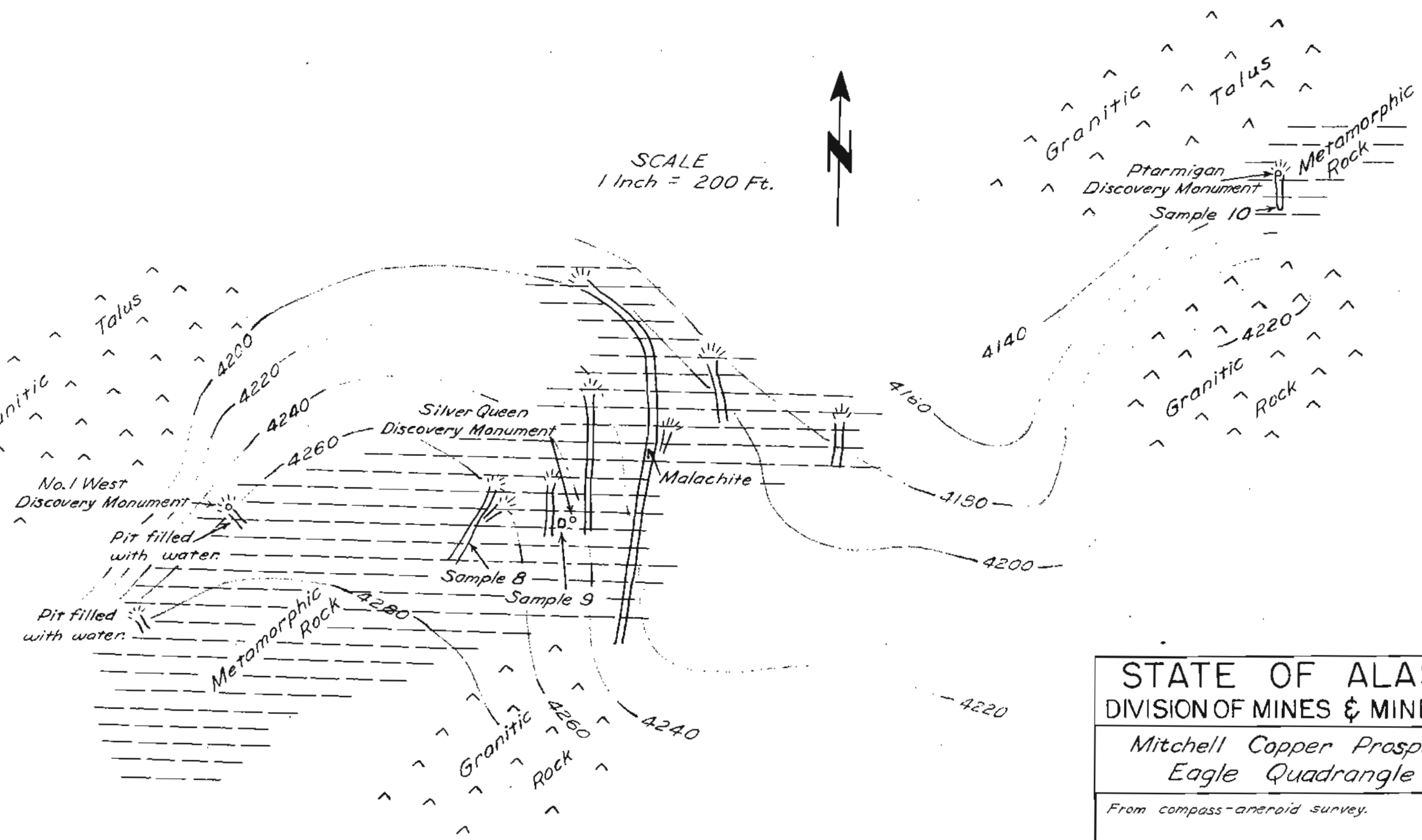
VICINITY MAP

MITCHELL COPPER PROSPECT

Adapted from U. S. Geological
Survey Maps of the Eagle and
Tanacross Quadrangles.
R. Saunders Jan. 1962



CONTOUR INTERVAL 200 FEET
AREAS NOT SURVEYED BY DATUM INDICATED BY DOTTED LINES
DATUM IS MEAN SEA LEVEL



SCALE
1 Inch = 200 Ft.



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Mitchell Copper Prospect
Eagle Quadrangle

From compass-aneroid survey.