

RAINBOW RIDGE AREA NICKEL DEPOSITS

MI-068-02

Nickel-copper deposits occur in and are closely associated with ultra basic intrusive rocks cutting phyllites and diorite in a complexly faulted area south of the Denali fault. Both of the mineralized occurrences are very small but the percentage of outcrop is low and there is the possibility of overburden masking larger deposits. The largest showing (Forbe's discovery) occurs in a silicified zone in shattered diorite cut by ultra basic dikes now of serpentinite composition. The outcrop, which occurs in a northwest trending fault controlled draw, measures approximately 25' square with the mineralized portion measuring 3' at its widest point and 25' along its length. It is bounded by barren diorite on its southwest side, by barren diorite 50' downslope (northwest) and by overburden on the east and southeast. Another small occurrence with lenses of pyrrhotite lies 50' to the southwest and is surrounded by overburden. The mineralization is complex but appears to consist chiefly of either nickeliferous pyrrhotite or another more complex nickel sulphide, and cubanite. The percentage of sulphide varies from approximately 20% to greater than 50% and occurs as disseminated to massive aggregations closely associated with quartz. The pyrrhotite appears to have low magnetic susceptibility. A chip sample across the width of the largest showing ran 1.7% Ni and .5% Cu, and a grab sample of the showing 50' to the southwest ran .7% Ni and 1.0% Cu.

The original Emerick showings approximately $1\frac{1}{2}$ miles to the west of the Forbes discovery consist of small spotty lenses of nickeliferous pyrrhotite associated with dunite and serpentinite dikes cutting phyllites.

Numerous other mineralized occurrences lie in the Rainbow Ridge area including a zone of northwest trending quartz-copper bearing shears cutting sediments and volcanics approximately $\frac{1}{2}$ mile to the south of the Emerick showings. These occurrences are of no economic significance in themselves but do reveal a considerable introduction of sulphides in the area. A pyrite bearing conglomerate occurs adjacent to the above mentioned zone and a sample is being assayed for the possibility of anomalous gold content.

Exploration Possibilities

A nickel-copper prospect with a reasonable chance of attaining one million tons of 3% combined nickel-copper ore would probably induce some mining companies to do extensive exploration work in this part of Alaska. The known surface showings in the Rainbow Ridge area give very little hope for this type of tonnage but they have not yet been sufficiently opened up to know their true extent. The geology and occurrences are encouraging enough and the overburden cover is extensive enough to point to the possibility of larger covered deposits than the ones exposed. The overburden filled fault controlled draw in which the Forbes discovery occurs, and the northeast trending overburden filled fault valleys adjacent to the Forbes showing and the original Emerick Claims appear to be especially favorable areas. If further work is desired, the best approach would be a drainage geochemical study of the small drainages and a combined ground magnetometer and electrical survey of the gravel covered areas. I would recommend the use of a sensitive magnetometer (20 gamma accuracy or greater) and an induced polarization unit. I would estimate that the whole job could be done by an experienced exploration company crew in less than two weeks at a cost of less than \$5000.

Mo Kampner

November 29, 1963

Division of Mines
and Minerals

Form M-1-8-62-3M

Assay Office Anchorage, Alaska

Date July 25, 1963

REPORT OF ASSAY

On samples received from Mo Kaufmann & Robert Forbes

Address Delta

Assay No.	Sample Marked	OUNCES PER TON		Value per Ton	Percentage of
		GOLD	SILVER		
15315	Rainbow Mt. 50' S.W. of Main show	Nil	Nil		
15316	Rainbow Mt. across main show	Nil	Nil		
15317	Rainbow Mt. conglomerate	0.12	Nil	\$4.20	

NOTE: No trace of Platinum by fire assay.


I.W. Mitchell Assayer.