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SUMMARY REPORT

EUREKA PROJECT

December 1, 1966

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INTRODUCTION

Following a review of all geological, geophysical and geochemical data, a decision was made to explore the Cirque 2 mineralized zone by drilling a horizontal diamond drill hole through the most favorable section. A short adit with an underground drill station was planned to provide safety from rock and snow slides. Accordingly, tunneling and drilling contracts were arranged and mining commenced on September 18, 1966.

Inclement weather plagued the program throughout and as a result a D7E bulldozer was operated full time on road maintenance and transportation of equipment and supplies. Snow slides, several of which completely covered the portals, occurred with increasing frequency and this hazard combined with the extremely poor rate of advance forced abandonment of the drill-hole at a depth of 630 feet.

GEOLOGY

The rock assemblage that hosts the mineralized zone in outcrop includes diorite, quartz diorite and pyroxene porphyry although only the latter occurs in the diamond drill core. The most significant copper mineralization in outcrop invariably occurs in a densely fractured diorite veined by quartz and calcite stringers. The mineralized zone is bounded by basic rocks of gabbroic composition to the northeast and by low grade metamorphic rocks to the southwest.

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The zone has an indicated strike length of 5000 feet, trending northwest across the headwall of Cirque 2, and an average width of about 800 feet. Representative grab samples from pits and trenches along the zone produced assays ranging from 0.10 to 0.60% copper across five foot sample widths. Most samples assayed were highly oxidized.

GEOCHEMISTRY

Forty soil samples were taken along and down slope from the main zone. Copper values in soil ranged from 200 to 8200 ppm with 10 samples yielding above 1000 ppm. Background for the general Eureka environment averages about 50 ppm copper.

GEOPHYSICS

A helicopter-borne aeromagnetic survey was flown in order to gain better definition of the mineralized intrusive mass. The data reveal a strong magnetic closure flanking the mineralized zone to the northeast. This magnetically high feature probably defines the areal extent of the magnetite-rich gabbros which outcrop in the cirque drainage.

Correlation of the magnetic with the electromagnetic data demonstrates that the northeast margin of the conductive zone coincides with the steepest magnetic gradient.

MINING

Tunneling was commenced on September 18 and completed by October 4, 1966. The main adit, which is 73 feet in length, was driven on a bearing of S45°W from a point on the northwest headwall of Cirque 2 at an elevation of 5350 feet. A secondary entrance, 36 feet in length, was driven to provide additional safety and ventilation. A diamond drill station and water sump was provided at the end of the main adit by crosscutting a total of 27 feet. Thirty-three feet of timbering was completed, including the external snow shed.

DIAMOND DRILLING

Drilling, which did not commence until October 22, was delayed by a series of contractor supply problems. The hole, designated 66-1, was collared at the face of the main adit on a bearing of S45°W and a vertical angle of plus 4°. Although the contractor supplied capable men and entirely new equipment drilling progress was impeded by mechanical difficulties throughout the program.

Water flow increased rapidly with depth to the point that, at 613 feet, the hole was making 10,000 gallons per hour. In order to control the water AX casing was driven to the bottom of the BQ hole and conventional AX equipment was substituted for BQ wireline. However, pressure built up rapidly as drilling recommenced and only 17 feet of advance was made during four twelve hour shifts.

Five slides occurred during this period and a considerable amount of time was lost clearing the portals which were completely covered on

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two occasions. The decision to stop drilling was made on November 15 and the program was demobilized by November 20.

DRILL CORE SUMMARY

^c Pending petrographic examination, the rock cored can be classified as a pyroxene porphyry with a fine grained, grey-green and esitic matrix and phenocrysts ranging from microscopic to 1/4 inch in size.

From 0 to 325 feet the pyrrhotite to pyrite to chalcopyrite ratio is roughly 10:1:1 with the significant sulphides occurring as fracture fillings. From 260 to 280, increased fracture density is accompanied by 0.28% and 0.23% Cu for the respective ten foot assay sections.

Through a transition zone from about 325 to 375 feet pyrite becomes the dominant sulfide with the above-mentioned ratio effectively reversing. A flooding of epidote veinlets accompanies the transition.

A gradual but slight increase in chalcopyrite content is visible from 375 to the end of the hole. The copper is intimately associated with pyrite veinlets. Minor disseminated chalcopyrite, probably replacement of mafic phenocrysts, occurs throughout the core. Fracture density increases noticeably between 560 and 630 and is accompanied by slightly improved grade.

Copper grades are summarized graphically in 50 foot sections on Figure 1. The adit and drill hole are described in profile in Figure 2.

CONCLUSIONS

The diamond drill target zone, which was projected for intersection between 600 and 800 feet, was probably not tested. The slight but gradual improvement in grade as the zone is approached is considered slightly encouraging. Sulfide distribution suggests a zone arrangement that commonly occurs about massive deposits.

Extremely high exploration costs must bias any evaluation of the Eureka prospect. Seven hundred feet of the zone has been penetrated without encountering ore grade material. The probability of success has been significantly reduced and any additional exploration effort must be considered highly speculative.

Respectfully submitted,

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