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James Doyle Sell Mining Collection

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DBB

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J. H. C.

NOV 9 1966

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

November 8, 1966

J. R. W.

DEC 6 1966

TO: J. H. COURTRIGHT  
FROM: J. E. KINNISON

W.E.S.  
FEB 17 1967

PINE FLAT  
TURKEY CREEK MINING DISTRICT  
PORPHYRY COPPER PROSPECT  
YAVAPAI COUNTY, ARIZONA

I obtained the following new information on the subject heading from David Lowell, Consulting Geologist from Tucson, November 2, 1966.

As you may recall, Pine Flat is a small but typical porphyry copper altered zone located 8 miles west of Mayer. The leached capping is moderately to strongly sericitized, and contains principally limonite after pyrite with a small amount of "live" limonite. David Beck first noted and then mapped the altered zone about 1-1/2 years ago. I spent one day in the field with Beck, and concurred with his mapping and analysis of the prospective potential. In his memorandum to you (6/8/65) Mr. Beck concluded ". . . Pine Flat is too small and probably of too low-grade to be of interest."

Mr. Lowell had supervised exploration of Pine Flat two or three years ago, and he furnished me with data on the air rotary holes found by Mr. Beck. I don't know if Lowell was a consultant only, or whether he was a participating interest. He stated that the copper values obtained from the drill cuttings assayed .19% Cu as chalcopyrite. This was the average for each individual drill hole--an unusual situation. The presence of molybdenum was not mentioned in our conversation. Chalcocite is reportedly present in trace amounts only beneath the leached capping, and did not add significantly to the assays. Lowell is no longer associated with the property.

Lowell also stated that COMINCO is drilling on the south part of the altered zone and that they have "several" drill rigs operating. Reliable rumor suggests that COMINCO has developed a small tonnage of sub-marginal grade. Mr. Lowell surmises that they don't want to drop the property at this time, but also realize that they do not have an orebody.

I suppose the helicopter reconnaissance crew have seen these drills and have noted their approximate location.

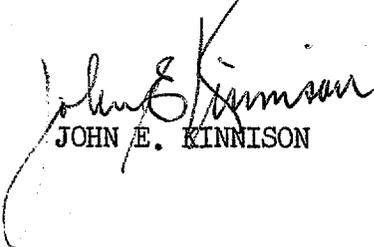
COMMENTS

Mr. Beck's conclusions regarding the prospective value of Pine Flat are now verified. In his memorandum he stated that he could be sure that sulfides were contained in only one pile of the discarded cuttings. A sample of these cuttings assayed .14% Cu and .024% Mo.

As I recall the drill cuttings found near the drill sites appeared to have been tossed to the edge of the drill site. They were not layed out in an orderly fashion. It was not at all clear whether these were split rejects or merely portions of the hole which had not been samples. Possibly they represented a cleaning-out of the hole which had caved in.

The leached capping appeared to be derived mostly from pyrite, and that copper sulfides were minor. That these holes, as reported by Lowell, did contain as much as .19% Cu in the form of chalcopyrite; and that alteration in porphyry of a typical quartz-sericite type with 5% total sulfide leads to the following conclusion:

Conditions in this area were 1) never favorable for the formation of chalcocite in any quantity, or 2) that the more common history during the Mid-Tertiary in the southwest prevailed and formed chalcocite during the time--during the most recent mountain up-life these secondary chalcocite zones have been eroded and/or leached. The second assumption above seems to me the most likely, and the high ridges should naturally receive the closest attention in exploration. Unfortunately, Mr. Beck has observed that the altered porphyry intrusives in the Bradshaw Mountains tend to form topographically low areas.

  
JOHN E. KINNISON

JEK:pjc  
cc: WESaegart



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# Displacement calculations across a metamorphic core complex mylonite zone: Pinaleño Mountains, southeastern Arizona

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