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2943 E. Chula Vista Drive
Tucson 12, Arizona
February 11, 1954

Mr. C. J. Abrams
Climax Molybdenum Company
Midland Savings Bldg.
Denver 2, Colorado

Dear Jack:

Here are my reactions on the four properties visited.
I put them up in four separate parts with an extra
typed copy of each, and letter of transmittal.

Greater emphasis was placed on the Pinal Grande because
I agree it will more nearly fit something you might
be interested in.

Hope Laura is convalescing satisfactorily and that we
will see you in New York next week.

Best personal regards.

Walter E. Heinrichs, Jr.
Registered Engineer

WEH:ik

4 February 1954

RECONNAISSANCE EXAMINATION

COPPEROSITY COPPER MINE

VEKOL -- CASA GRANDE DISTRICT, (Across Kohatk Wash from the Greenback and
Pinal Grande)
PINAL COUNTY, ARIZONA

BY: WALTER E. HEIDRICH, JR.

This mine was once a profitable small high grade oxidized copper producer. Brief underground examination, indicates the ore pinched out or diminished in grade, both laterally and with depth. Extensive, strong mineralization is found on the surface as massive hematite veins and gossan material. This evidence suggests that not all of the associated copper-vein mineralization has been mined or discovered.

Deepest working is a 450 foot vertical shaft which had oxide all the way and very little water.

Host rock is a thin bedded Paleozoic limestone with some replacement also in quartzite and along the margin of porphyry dikes. Structural control is probably associated with several complex faults, the system of which has never been worked out. In general, the "plumbing system" seems to have been adequate and substantiates the possibility of considerable migration.

Topography at the mine site is moderate, flat to the south and very rugged to the north.

Future of the property lies in the possibility of developing new veins in the area, secondary enrichment, or primary ore of adequate grade and tonnage. Continuity of the shoots and grade would be expected similar to that in the past. Overall tonnage would not be large.

Respectfully submitted,

WALTER E. HEIDRICH, JR.
Registered Engineer

4 February 1954

RECONNAISSANCE EXAMINATION

STANDARD COPPER MINE AREA

CASA GRANDE DISTRICT

PIMA COUNTY, ARIZONA

BY: WALTER E. HEINRICHS, JR.

Several veins or beds of oxidized copper are found around the southern margin of a typical, island type, desert mesa of extrusive rhyolite, andesite, associated breccias and basalt. The mineralization occurs mainly in the breccia and varies from a few feet to fifty feet in width, along zones striking roughly NE and dipping south under volcanics partially covered by alluvium on the flat around the mesa.

Size of the dumps and working indicate shipments of a few thousand tons were made, probably to the old Sisco Smelter near Red Rock. Sub-surface extent of the mineralization is not evident from the amount of work done and secondary enrichment is possible, however, the general situation suggests limited extent. The grade seemed to be spotty from the way mining had been done, notwithstanding Mr. Tonch's assay of the dump material, and profit from direct shipment is very doubtful. That means leaching would be required on the near surface ore. Water table is estimated to be about three hundred feet. The nearby agricultural development assures that adequate water could be developed from wells.

Further exploration can be done by bulldozer, trenching and even some preliminary mining by open cut, but eventually drilling would be required. Odds are against proving up any very large tonnage, however, a small mine could be developed.

Respectfully submitted,

WALTER E. HEINRICHS, JR.
Registered Engineer

4 February 1954

RECONNAISSANCE EXAMINATION

COPPER BASIN PROSPECT

WESTERN CASA GRANDE DISTRICT

PINAL COUNTY, ARIZONA

BY: WALTER E. HEINRICHS, JR.

This is a small East-West zone of oxidized copper with minor chalcocite showing in a large area of folded and faulted schist, probably pre Cambrian Pinal, and recent overlying volcanics. No major intrusive was noted nearby, however a large barren mass of granite lies a mile or so to the East. Considerable manganese stained quartz stringers and several small basic dikes and/or sills were seen.

Present estimated visible tonnage is of the order of 10,000 tons. Phelps Dodge is reported to have made tests and quoted \$12.00 per ton, delivered at Ajo, which is about a \$3.00 haul for flux. The ore is supposed to run 78% silica and between 1% and 10% copper, I would guess a median average of about 2% copper. One 100 foot drill hole angled forty-five degrees to the North across the schist structure and the best mineralization reported mineralized from twenty feet to eighty-five feet with ore from thirty-five to fifty-five feet.

A small operation might pay its way shipping flux and develop more tonnage in the process. In lieu of the flux market, leaching would be necessary, until enrichment or primary ore was encountered. None of these factors are promising in terms of either cost, tonnage or grade.

Respectfully submitted,

WALTER E. HEINRICHS, JR.
Registered Engineer

RECONNAISSANCE EXAMINATION

PINAL GRANDE COPPER PROSPECT

GREENBACK MINE AREA

VEKOL - CASA GRANDE - CIMARRON MOUNTAINS DISTRICT

PINAL COUNTY, ARIZONA

5 FEBRUARY 1954

by

Walter E. Heinrichs, Jr.

RECOMMENDATIONS AND CONCLUSIONS

Several intermittent mineralized exposures occur over an area of several thousand feet, however the continuity between them is difficult to estimate. This important factor could possibly be answered by careful geological study and certainly some mapping should be done prior to any extensive trenching, drilling and sampling program.

The property is good enough to warrant this type of exploration approach in conjunction with some sampling to confirm the various reports, providing the option terms in writing are within reason as stated by Paul Hinshaw, et. al. The discrepancy in the reports noted by Mr. Haley is interesting in that Hinshaw maintains that two holes were drilled, one to 300' (reported by Butler) and another to 576' (reported by Wagnon). The collars of two holes about 100' apart do exist. According to Wagnon; Tolmen, Joralemon, Darton, Tenney and Reber have been on the property with medium to favorable reactions, none of which seem to have been published. However Greenway of Ajo was supposedly interested in the property just before his death and a check with A. S. & R. confirms that they have been keeping track of it for some time now. I also got the impression from A. S. & R. that they have made offers to Hinshaw, but that the ownership was a problem or that Hinshaw was out of reason in the past. One report by C. A. Eotsford, which I was shown, read much the same as G. M. Butler's report.

LOCATION AND GENERAL DESCRIPTION

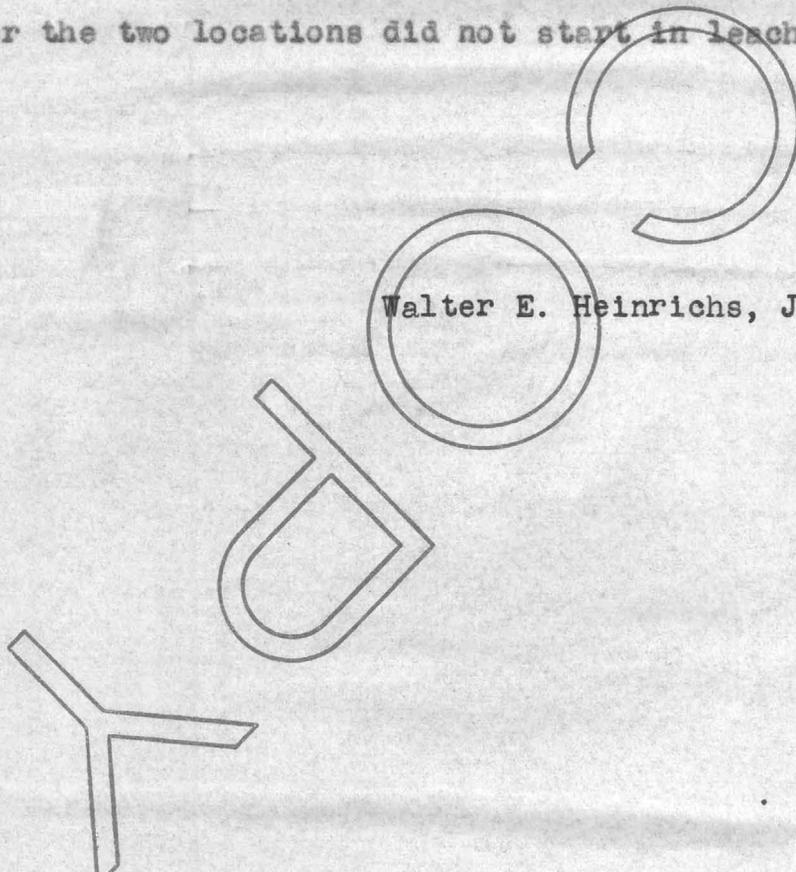
The property is approximately 40 miles southwest of Casa Grande. 30 miles is by paved or improved road, 10 miles follows near a large desert wash and is unimproved, but accessible by automobile. The general site is open, with moderate relief except for the surrounding hills which are quite rugged. Average elevation is slightly above 2000'.

GEOLOGY

Schist, of probable pre-Cambrian age ("Pinal"), lies in a steeply south-dipping east-west belt in the south part of the area. From the west to north-east margin of the area lying in an arc, are a series of faulted and eroded Tertiary or Cretaceous extrusives. These dip generally, from west to north east respectively. Much of the remaining central portion is covered by alluvial outwash with an estimated maximum thickness of about 300', with volcanics which partially correlate with those along the northern arc. The general structure suggests a faulted rube dome, with the center down dropped and eroded. The other exposures in the central area are the apparent intrusive porphyry with occasional schistose lenses and later veins and dikes of varying composition. Oxidized copper mineralization occurs in highly silicified ledges or plugs as stain along fractures or in altered and replaced feldspar. A very minor amount of sulfid was found in a quartz veinlet in the heavily altered and iron stained porphyry. Much of the porphyry and central volcanics

either shows copper stain, or is heavily altered and iron stained with intermittent strong fracturing.

The reported gold mineralization may be significant if true. As to secondary enrichment, the present water table is at about 300' and there is some surface leaching. The reported deep drill hole did not encounter enrichment, however the two locations did not start in leached material.



Walter E. Heinrichs, Jr.