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Have added conclusions  
to abandon at end of report

KORN KOB  
FINAL REPORT  
CAP 146-179

See -  
I have designated  
the detailed descriptions  
of each hole to be  
a separate Drill Hole  
summary, to be typed  
separately, a placed in  
front of the detailed logs of  
each hole.

The inception of this project was based on the existence of a substantial amount of oxide copper of submarginal grade/tonnage which had been indicated by close spaced drilling at the old Korn Kob Mine, on the northwest flank of the Santa Catalina Mtns., 16 miles south<sup>x</sup> 10<sup>o</sup>-east from the town of San Manuel. This rather significant amount of copper (8 million tons ore grading 0.5%<sup>Cu</sup> with low stripping ratio, as quoted in an advertisement by Keystone Minerals, Inc., Dirk Den-Baars, President; and an estimate by Heinrichs GEOEX - not tied to a mining plan - made for Essex International, Inc., 20 million tons grading 0.4%<sup>Cu</sup> copper) ~~This superferous zone~~, which occurs in a limestone bed of questionable age, but which may be either Martin formation, Mescal formation, or possibly Abrigo formation, is fronted by a wide basin covered with Gila conglomerate on the north. To the east of the Korn Kob Mine ~~where~~ <sup>Buchman</sup> ~~Buchman~~ Canyon - which runs its course easterly near the Korn Kob shaft but turns northerly two miles distant) ~~and~~ <sup>Buchman</sup> ~~where this~~ canyon generally follows the west boundary of a north- <sup>and Cretaceous</sup> trending spur of younger Precambrian, <sup>which bounds</sup> and Paleozoic <sup>brackets</sup> sediments, the Gila conglomerate basin on the east. Immediately to the west of the Korn Kob Mine irregular bedrock outlines of premineral rock are lapped over by Gila conglomerate and form a westerly boundary to the Gila conglomerate <sup>basin.</sup> ~~centry.~~

This seemed to be an ideal target area for a CAP venture, which would extend northerly <sup>from the Korn Kob Mine</sup> into the embayment of Gila conglomerate cover. Subsequent geologic work indicated that the spur, or ridge, which extends

<sup>at an angle</sup>  
northerly <sup>^</sup> from the general northwest trend of the flank of the Santa Catalina Mtns. appears structurally different, and was believed on indirect evidence to be the upper plate of a major flat fault. Structurally, the sediments within this north-trending ridge are complexly folded and cut by numerous low-angle faults - which may be either thrust faults or low-angle gravity faults, and which differ from the general northwesterly grain of the strike of sediments in the main north <sup>west</sup> flank of the Santa Catalina Mtns.

Two drill holes were selected in the Gila conglomerate basin north of the Korn Kob Mine. The first hole was a simple offset into a structurally unknown area. It was designed to determine if a separate copper center existed beneath younger gravels at a distance of about 1.5 miles northerly. The second hole had a dual objective, which was to evaluate the covered basin northeast of the Korn Kob mineralization, and also to attempt to penetrate beneath the postulated fault which might exist in this area, projected from beneath the north-trending Paleozoic ridge mentioned above. The third hole was designed specifically to collar within the sediments of the north-trending ridge and to attempt to drill through to a lower plate, basing a possible direction of movement parallel to that proven at the San Manuel-Kalamazoo orebody offset, and also indicated by the dips of Tertiary sediments in Ferté Teran basin 20 miles farther south along the San Pedro River in the vicinity of the CAP Palomas Wash project (which project was abandoned due to gravity indications of excess cover).

*Summary Log LN-1*

Drill hole 1 was collared in Gila conglomerate and drilled in that formation to bedrock at 720 feet. Bedrock consisted of a grayish yellow-green quartzite, with pale red intervals, which is believed to be correlative to the lower massive unit of the Dripping Springs quartzite of the Apache group, or to metamorphose Pioneer formation, both

of which are exposed on the north-trending ridge where it slopes into <sup>Buehner</sup>~~Burner~~ Canyon 1.5 miles to the east. The low angle fault which was postulated beneath the north-trending ridge was not intercepted, and would not have been expected unless drilling had continued to greater depths. A probable correlative of this postulated fault crops out at Lone Hill 1.3 miles northwest of drill hole LH-1, and projections of dip suggest that this fault might exist at a relatively shallow depth beneath <sup>the bottom of</sup> drill hole LH-1. The position of LH-1 was not such that we believed penetration of a lower block would be in a position to locate faulted segments or a "root" zone of the Korn Kob mineralization, and therefore was stopped. Rock identification was confirmed by two spot drill holes, and the drill hole was bottomed at 830 feet.

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*SUMMARY LOG, LH-2*

LH-2 drilled in Gila conglomerate to a depth of 540 feet where abundant water inflow required conversion to mud at 560 feet. The samples from 540 to 560 were negligible as very little return was obtained. This is believed to be a water-bearing sand immediately overlying bedrock. From 560 to 570 circulation was lost and drilling was hard, no cuttings were recovered. Bedrock is estimated to have been encountered at 560 feet. Between 570 and 576, two spot cores drilled with air recovered limey arkosic quartzites which were believed to be Abrigo(?) formation similar to an outcrop of Abrigo(?) which occurred one-half mile southwest of LH-2. The drill hole was cased and a diamond drill was subsequently placed on LH-2 to deepen it. LH-2 was deepened by a diamond drill to a total depth of 1980 feet. It penetrated generally thin bedded limestone, silty limestone, a few limey quartzite layers, and some intervals of thick-bedded limestone. Colors range from gray to sometimes pinkish. Although the lithology appears to represent the Abrigo formation the thickness is far too great to correlate to the Abrigo, and it is concluded that LH-2 penetrated an upper portion of the Penn-

sylvanian section, possibly the Horquilla limestone, which is represented in outcrop in the north-trending ridge and is assigned in general to the Naco group, as used to include all of the Pennsylvanian/<sup>P</sup>Permian section. The small outcrop one-half mile southwest of LH2, which also appears to <sup>be</sup> ~~represent~~ the Abrigo formation, is no doubt part of the Naco group. No mineralization was encountered <sup>by LH-2,</sup> and the low-angle fault which the drill hole probed for was not encountered. No mineralization of consequence was found.

Drill hole LH-3 was started with an air rotary and drilled to 848 feet, where caving prevented further drilling. The down-the-hole-hammer rotary section encountered, from 0 to 320 feet, fine grained limestone which may correlate to the upper Paleozoic Naco group undifferentiated. Between 320 and 600 feet the hammer chips indicate the rock to be typical Escaroso limestone. The loss of part of the section of the Escaroso, which is normally thicker, is believed to be accounted for due to thinning by low-angle faults - which were at least partly observed at the surface. At 600 feet a short section of diabase initiated the Apache group, probably beneath a fault, and the rotary section continued in diabase and quartzite, which may represent both the black shaley quartzite of the upper member of the Dripping Springs quartzite, and the buff colored lower Dripping Springs quartzite. Small amounts of pyrite were present in the lower member, as well as in the diabase.

† Diamond drilling, which followed the rotary section continued to intercept † diabase, usually with ubiquitous pyrite and very sparse observations of molybdenite(?), and a general chloritized aspect. The diabase was interspersed with quartzitic shale or phyllite and quartzite with a phyllitic texture, some of which contained very small amounts of pyrite and in general appeared to have undergone a low grade metamorphism. At a depth of 1557 a single half-inch zone of gouge represented the

The metaquartzites and phyllites do not correlate well to a known reference section, and are simply classified as Mesozoic (Probably Inorganic).

contact between the overlying Apache group diabase and Apache group sediments, and a change in rock type to obscure sections of metasediments with inclusions of graywacke and igneous rock which appeared to be diabasic. Immediately below this contact are irregular quartz veins or silicified zones and a certain amount of vugs with a reddish hematite apparently derived from sparse pyrite. The RQD factor decreases at about this same interval and remains low for the next 100 feet, also indicating breakage accompanied by the transition from the Apache group above to the metaquartzites or phyllites below. Together with the sharp gouge contact with diabase above and the general breakage and some silicification below, this is believed to represent the low-angle fault which was postulated to exist. Although in the footwall of the low-angle fault the <sup>Mesozoic</sup> quartzites ~~are~~, <sup>and</sup> in some instances <sup>the</sup> phyllites, have some very minor pyrite and some sericite, this seems to be the result of a regional low grade metamorphic effect, including "stretched pebbles". Occasional black powdery limonite was present but could not be related to any specific sulfide type. The best guess is that it is the oxidation of magnetite or of pyrite. At 1718 LH-3 entered a quartz monzonite porphyry, with a well developed fine grained groundmass and uniform porphyry texture. Feldspars were weakly or moderately argillized, silicification was absent or weak. For any practical purpose the porphyry can be characterized as "dead" - that is, unmineralized from a porphyry copper exploration standpoint. Minor pyrite, sometimes along quartz veinlets were observed but nothing diagnostic of proximity to a porphyry copper system, and both copper and moly were extremely low. At the termination of LH-3 at a total depth of 2002 feet, the project was terminated.

In December additional information was obtained from Dirk Den-

copper center within a thousand feet of the Korn Kob shaft mitigates against a CAP participation in such a venture and we recommend that it not be undertaken.

A small block of Federal claims, and one State Section, will become delinquent this fall, and these should be allowed to abandon.

The three drill holes planned for the CAP evaluation of the Korn Kob area have penetrated recognizable pre-mineral formations, and successfully penetrated (LH-3) the lower plate of a flat fault, ~~to~~ where we hoped to find mineralized fault slices or an intact "root ~~zone~~ system. No mineralization of significance was found; we believe the ~~the~~ Korn Kob ~~around the~~ CAP area has been sufficiently evaluated, and recommend the Korn Kob project be abandoned.

Baars of Keystone Minerals, regarding the Korn Kob drilling. This, together with the Essex information, could be further studied to determine if an exploration possibility exists immediately adjacent to the area which has been rather extensively drilled along the ridge south of the Korn Kob shaft. This mineralization appears to die out abruptly on the east and to be exposed to erosion along fault traces <sup>on</sup> ~~along~~ the west and south. There is some suggestion that the easterly boundary is not fully defined due to structural complications but this is viewed as a wildcat chance. Drill holes to the north have so far proven that the mineralization either fades in that direction or dips off at a projected dip which would soon bring the mineralization to 2000 feet. <sup>It</sup> There is also some problem with the occurrence of oxide minerals and their origin in the main Korn Kob zone. This is a tactite zone comprised of garnet and hematite (the hematite was probably derived from magnetite - although it may be primary hematite), and no sulfide minerals have ever been identified. There is a paucity of evidence of preexisting sulfides in the form of box works or cavities, although the abundant soft hematite may obscure the presence of such indication of sulfide presence. The most probably explanation is that, indeed, this was a sulfide body which has been thoroughly oxidized largely in its present place, although extensive migration of copper oxides is clearly evident. A second hypothesis would have the oxides transported from a copper orebody into the position within the tactite zone where the oxide copper now exists. If this should be the case, the logical source would be updip to the south, and would have been eroded and be now non-  existent. There is a long shot possibility of developing more tactite ore by exploration in and near the old Korn Kob workings, we believe, to the north. However, the lack of mineralized porphyry dikes and other indications that this is a direct association peripheral to a porphyry

**KORN KOB**  
**FINAL REPORT**  
**CAP 146-179**

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a long shot possibility of developing more tactite ore by exploration in and near the old Korn Kob workings, we believe, to the north. However, the lack of mineralized porphyry dikes and other indications that this is a direct association peripheral to a porphyry copper center within a thousand feet of the Korn Kob shaft mitigates against a CAP participation in such a venture and we recommend that it not be undertaken.

The three drill holes planned for the CAP evaluation of the Korn Kob area have penetrated recognizable pre-mineral formations, and successfully penetrated (LH-3) the lower plate of a flat fault, where we hoped to find mineralized fault slices or an intact "root" system. No mineralization of significance was found; we believe the Korn Kob CAP area has been sufficiently evaluated, and recommend the Korn Kob project be abandoned.

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are irregular quartz veins or silicified zones and a certain amount of vugs with a reddish hematite apparently derived from sparse pyrite. The RQD factor decreases at about this same interval and remains low for the next 100 feet, also indicating breakage accompanied by the transition from the Apache group above to the metaquartzites or phyllites below. The metaquartzites and phyllites do not correlate well to a known Cretaceous section, and are simply classified as Mesozoic (possibly Jurassic). Together with the sharp gouge contact with diabase above and the general breakage and some silicification below, this is believed to represent the low-angle fault which was postulated to exist. Although in the footwall of the low-angle fault the Mesozoic quartzites, and in some instances phyllites, have some very minor pyrite and some sericite, this seems to be the result of a regional low grade metamorphic effect, including "stretched pebbles". Occasional black powdery limonite was present but could not be related to any specific sulfide type. The best guess is that it is the oxidation of magnetite or of pyrite. At 1718 LH-3 entered a quartz monzonite porphyry, with a well developed fine grained groundmass and uniform porphyry texture. Feldspars were weakly or moderately argillized, silicification was absent or weak. For any practical purpose the porphyry can be characterized as "dead" - that is, unmineralized from a porphyry copper exploration standpoint. Minor pyrite, sometimes along quartz veinlets were observed but nothing diagnostic of proximity to a porphyry copper system, and both copper and moly were extremely low. At the termination of LH-3 at a total depth of 2002 feet, the project was terminated.