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HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

January 8, 1971

Mr. H.A. Backer
Kalium Chemicals Ltd.,
303 Washington
Sante Fe, New Mexico 87501

Dear Hal:

As you requested during our conference at our office on December 28, 1970, this letter states our recommendations and feelings about the Orizaba Property near New River, Maricopa County, Arizona. We are familiar with this property because of previous geophysical work we have done there in 1963 and have since intermittently been involved in discussions with the various owners, lessees and promoters holding the property.

This property includes and surrounds the Orizaba Mine which is located in Section 29, T. 8N., R. 3E., in Maricopa County about 38 miles north of Phoenix, Arizona and about three and one half miles east of the Black Canyon Highway along a dirt road beginning roughly six miles north of the town of New River. The property (at least in 1965) consists of eleven patented claims and twenty-seven unpatented claims. The up-to-date property status would need to be clarified before any final commitments are made.

The known ore mineralization is within a strong, steeply northwest dipping shear zone within Yavapai Schist. It trends roughly N 60° E and mainly consists of chalcopyrite and pyrite, in part nearly massive. Typical ore values apparently ran about two to ten percent copper and there has been important production (quantity unknown to us) from underground development on the 30, 70, 100 and 200 foot levels. The mine has been dewatered on several occasions recently, and some of the stopes were seen to still be in four (+) percent copper values across significant widths.

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The mine was closed down just prior to World War II but apparently not due to a lack of ore. A new headframe and collar had even been constructed but the shaft was never sunk - supposedly because someone had absconded with the company funds.

In the summer of 1963, on behalf of the owners of the property (Demco Corporation) GEOEX conducted several reconnaissance geophysical surveys including magnetics, self potential and induced polarization over and near the Orizaba Mine with quite encouraging results. A strong sulfide zone several hundred feet in width and at least 1,200 feet in length and open on both ends, was delineated by the I.P. and S.P. which correlated well with the known mineralization zone and showed pronounced extensions therefrom.

Partially based on the geophysical work, three holes totaling about 1750 feet were drilled in the eastern extension of the mineralized zone where the response was the strongest. No significant copper values were reported at that time, but the cause of the anomalism was determined: numerous bands in the shear zone carrying strong pyrite-graphite mineralization. Apparently the core was not assayed during or upon completion of the drilling. Last year, selected intervals were assayed and show submarginal but interesting copper values. You have these results, I believe.

We feel that this property has been very incompletely evaluated and still has excellent potential for an economic discovery, the reasons being as follows:

1. The geophysical anomalism, and therefore the mineralized zone is open-ended down strike both directions from the mine workings.
2. Only a very small portion of this total (and unknown) length has been tested by drilling.
3. The width of the shear zone has not been fully tested - even the deepest drill hole apparently did not completely intersect the entire width. Often, the most interesting mineralization is near or on the contacts of a zone such as this.
4. No recent drilling has been done westerly of the mine workings and yet the geophysics indicate important (but somewhat weaker) anomalism persisting in this direction and there is some suggestion that the ratio of chalcopyrite to pyrite and

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graphite increases in this direction. The partially sunk new shaft may have been intended to develop this western zone. Also this area has one of the better geologic surface shows of copper.

5. The presence of pyrite and graphite is not really discouraging (only a complicating factor) as these minerals are often intimately related to and associated with base mineral deposition.

6. The economic potential at depth below the existing 200 feet depth of working has not been evaluated and the I.P. indicates strong mineralization persisting well below 500 feet in depth.

7. The general area is worthy of regional investigation for similar deposits in parallel zones. Also, the deposit is on a strong aerial photographic regional lineament which needs further study.

We therefore recommend that you acquire an option on this property if reasonable terms can be negotiated with Mr. Lewis Cooper of Bangor, Maine, the present owner.

If a mutually beneficial arrangement can be consummated, we then recommend that GEOEX conduct additional detailed I.P. and perhaps S.P. surveys to more completely delineate the entire mineralized zone and select several drilling targets to most effectively and thoroughly explore this promising property. Of course, the mineral rights and ownership status should be verified before any firm commitments are made. Some electromagnetic work should also be tried to see if the more massive sulfide zones can be outlined. Turam should be tried as well as your Crone "shootback" system because of their relative immunity to terrain effects. Also, your VLF should be tried in case the absolute sulfide conductivity is poor, realizing that terrain interference will be present.

About two or three crew weeks would be the minimum amount of geophysical work needed to extend and detail the existing coverage to a degree sufficient to properly outline a drilling program and would cost roughly \$4000.00 to \$6000.00. Encouraging initial drilling could, of course, appreciably extend this amount of coverage.

Two target areas, as we discussed previously, could be drilled contemporaneously with the above geophysical work

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in that they are in areas already fairly well covered geophysically and have supporting and encouraging geologic aspects. The first priority hole would be in or near Line 2, collared in the canyon angled southeasterly about 45° from vertical to obtain an intersection several hundred feet in depth below about station 0.375S on Line 2. The other hole should be drilled in the area of the existing workings to intersect about 500 or 600 down dip to test for mineralization below the stoped areas.

Sincerely yours,
HEINRICHS GEOEXPLORATION COMPANY

Chris S. Ludwig

Chris S. Ludwig
Senior Geophysicist

CSL/re:



HEINRICHS
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5964

August 26, 1970

Dr. W. Kube, Geologist
Kallum Chemical Limited
1024 Don Diego Avenue
Santa Fe, New Mexico 87501

Re: Self Potential Equipment
Purchase Inquiry

Dear Dr. Kube:

In reference to your telephone discussion with Mr. Walter E. Heinrichs, Jr., last Thursday regarding the purchase of self potential equipment, we offer the following suggestions and quotes.

If desired, we can supply our standard Mark 3 self potential receiver but we have no on-shelf units for purchase or rental. Availability would be a minimum of 120 days as our electronics division is swamped with prior orders.

This is possibly a longer wait than you desire or need, to become operational in self potential work. Therefore we offer the alternate suggestion of another commercially available digital multimeter instead of our Mark 3 unit. The non-polarizing electrodes, reel and wire we can supply on a one or two week delivery basis. Probably, a thirty day delivery for the entire set of gear would be involved and perhaps less if everything dovetailed perfectly.

The digital multimeter we recommend procuring for you is the Honeywell Digitest 500. It supposedly has an off-the-shelf delivery and retails for about \$250.00, less rechargeable battery pack and leather protecting case (if available). The total price would therefore be roughly \$350.00. You could purchase the unit yourself and we supply the accessories, or preferably, we could obtain the unit and check it out in the laboratory and field and, if satisfactory, sell it to you with a 20% mark up.

The Digitest 500 has electrical specifications that make it ideal for self potential work: 0.1 MV sensitivity, high input impedance (2 - 50 megohms) and + 0.2% reading accuracy - all more than sufficient for field S. P. measurements. The digital neon tube (Nixie) readout almost completely eliminates operator reading errors. Also the unit is capable of checking the measuring circuit resistance when desired and can be used as a general test meter in other applications.

Dr. W. Kube

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August 26, 1970

Our main concern is that we haven't field evaluated this unit yet. It seems quite rugged and its battery pack mounts flush making a compact unit. The rechargeable batteries should give one field day's operation and recharge overnight.

The accessory gear is priced:

Non-polarizing electrodes, four recommended	
@ \$15.00 each-----	\$ 60.00
One commutated 9" reel with reel handle-----	111.00
1500 feet of 16 AWG copper stranded wire @ \$35/ 1000'--	52.50
Miscellaneous connectors-----	5.00

Total Accessories----\$ 228.50

If desired, the Mark 3 S. P. receiver
(120+ days delivery)-----\$ 450.00
Or the Honeywell Digitest 500 instead of the Mark 3
at about \$350.00 + 20%-----\$ 420.00 ±

A simple manual of basic instructions would be supplied in either case at no charge.

Technical consultation on use and application of the S. P. equipment by a staff geophysicist would be at \$150.00 per day plus living and travel expenses and two or three days total should suffice.

Please let us know if either of the above equipment alternates are acceptable to you. If you decide on the Digitest route, we will obtain up-to-date quotes on price and availability from the supplier and give you a firm quote. If you decide on the Mark 3 route, our quote is, as above, \$678.50 with 120 to 150 days delivery.

Sincerely,
Heinrichs GEOExploration Company

Chris S. Ludwig

Chris S. Ludwig