REPORT

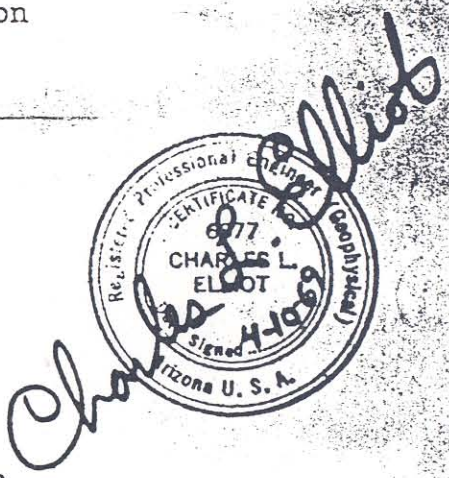
REVIEW OF ALL GEOPHYSICAL DATA

CALICO PROSPECT, SCHURZ, MINERAL COUNTY, NEVADA

for

Occidental Minerals Corporation

Wheat Ridge, Colorado



by

CHARLES L. ELLIOT
Mining Geophysical Engineer
4653 E. Pima Street
Tucson, Arizona 85716

As requested by you, a review of all of the geophysical data for the Calico Prospect near Schurz, Mineral County, Nevada has been performed. The data resulted from surveys from various well known geophysical contractors including Aero Service Corporation, Philadelphia, Pennsylvania; McPhar Geophysics, Ltd., Toronto, Ontario; Huntec, Ltd., Toronto, Ontario and in house company surveys by Kennecott Copper Corporation and Walker-Martel Mining Company and laboratory work and geophysical data review by Dr. John S. Sumner, University of Arizona, Tucson, Arizona. The results of this review and interpretation are herein presented. The maps and data for this project that were available to me for study, review and interpretation were as follows:

1. Bouguer Gravity Map, Walker River Reservation Area, Mineral County, Nevada. Scale 1:62,500, September 1965. Data by K.C.C. (Kennecott Copper Corporation?).
2. Induced polarization-resistivity drill hole logs for drill holes CA-1 and CA-3, July 1966. Data by G. Van Voorhis, Kennecott Copper Corporation.
3. Report, Analysis of Geophysics on the Walker River Reservation, Mineral County, Nevada, John S. Sumner, November 25, 1966, containing physical property laboratory measurements and discussion of geophysical data.

4. Letter, John S. Sumner to R. L. Haxby dated January 14, 1967 containing magnetic susceptibility determinations on samples, Calico Area, Mineral County, Nevada.
5. Ground magnetic profiles across Calico Prospect, undated, anonymous, presumably run by and/or for Walker-Martel Mining Company. Consists of 34 profiles, some of which are duplicated.
6. Airborne Magnetic sheets numbers 6, 7, 11, and 12 of the Total Intensity Aerial Magnetic Survey of the Walker River Reservation flown by Aero Service Corporation for Walker-Martel Mining Company, May, 1963.
7. Report, Drilling proposal, Calico Area, Walker Indian Reservation Project, B. W. Adams and J. H. Volgamore, Occidental Minerals Corporation, February 28, 1969.
8. Technical Paper, Exploration of the Calico Area, Walker River Indian Reservation, Mineral County, Nevada. E. F. Lawrence and R. L. Redmond, AIME preprint no. 67-I-311, September, 1967.
9. Miscellaneous drill log information, Calico and West Calico Projects, Occidental Minerals Corporation files.
10. Miscellaneous data on wet magnetic separation of magnetite drill-core specimens, Calico Project, excerpts from Occidental Mineral files by A. R. Still.
11. Induced polarization-resistivity survey results, Calico Property, Schurz, Nevada, U.S.A., Huntec, Ltd. containing

the following:

Lines 1500NW, 3000NW, and 4400NW, data Summer, 1968 with old receiver.

Lines 1500NW and 4400NW, February 1969, data with new receiver.

Lines 0, 10W, and 10E, profiles undated, data with new receiver.

The purpose of this review and interpretation of all of the geophysical data available for the Calico Project was primarily to ascertain the location of the magnetic responsive body clearly indicated by magnetic data from the airborne survey and ground surveys and to further determine its dip for subsequent drilling and intersection of the magnetic body. In addition, it was also necessary to ascertain whether there was a possibility of the existence from the electrical data of a tactite copper orebody lying along the hanging wall flank of the magnetite-rich zone. It is understood that further drilling of this property will be performed immediately and therefore the analysis of this data was part of the necessary information before the planning of the drill program.

The quality of the geophysical data from the various surveys varied widely. Some of the data, as will be pointed out below, was of such a poor quality or uncertainty that it was thrown out

and could not be used in any interpretation. Other data appeared to have been plotted or reduced poorly even though the fundamental data was probably of excellent quality. Some data was not adequately defined as to organization, who performed the survey, how it was performed, instruments used, type of measurement made, etc. Therefore, only very general information could be derived from this type of data.

The electrical data, on the other hand, some of which is good data, some of which is questionable, resulted from the nature of the Calico Prospect area. The extremely low resistivity of the lacustrine deposits in the immediate area of Calico have given rise to severe noise problems and interference masking effects so that questionable data, in part, automatically results. Overall, there appears to be sufficient data of one type or another from this area by which a reasonable physical picture can be derived of the magnetic and electrical responsive zones at depth in the Calico area.

Specific comments on the data follow.

1. Gravity Survey

The gravity survey of the Calico area covered about 6 square miles and was run by K.C.C. Presumably, this is Kennecott Copper Corporation. A strong regional gradient exists in this area, positive to the northeast which is likely due to deep seated

structures and/or gross changes in thickness of alluvial cover. Unfortunately, this gravity survey is not extensive enough to interpret the residual response due to a dense magnetite body at depth. Within such a large regional gradient, the gravitational effect of a deep seated magnetite body would be merely an inflecture in the gradient. Thereby, in order to interpret the gravity data, it would be necessary to have extensive data for many miles away from the Calico in order to adequately define the regional gradient.

Gravity work should be a very useful geophysical tool for unraveling some of the mysteries of the Calico area. The magnetite body itself is quite dense in contrast to the overlying lacustrine beds and Tertiary volcanics and therefore it should be clearly indicated in a properly conducted gravity survey.

Sumner, in his report of November 25, 1966, has reported on specific gravity measurement of core samples from the various drill holes of the Calico area. The magnetite-rich zone would appear to have an average density in excess of 3 grams per cubic centimeter which would give rise to a fine density contrast against the overlying and surrounding rocks. Sumner further, in the same report, recommended that a gravity survey be conducted over the Calico area as well as the entire Walker River Indian Reservation on a regional basis. Had this

survey been performed, we would be in a much better circumstance for interpreting the complex geological situation here. If further exploration activity is to be performed in the Calico area or surrounding areas of the Walker River Indian Reservation, it is recommended that consideration be given to performing a gravity survey.

2. Seismic Surveys

Apparently, reflection and refraction seismic surveys were performed by J. W. Cooksley, Jr., Consulting Seismologist however, the data was not available to me for review. Sumner, in the aforementioned report, comments that some structural information was obtainable from the seismic data, however, it is doubtful if this technique has any really strong bearing on the exploration problems of the Calico Prospect.

3. Induced Polarization-Resistivity Drill Hole Logging Tests

Limited drill hole logging by induced polarization and resistivity was performed by G. Van Voorhis of Kennecott Copper Corp., Exploration Services, probably for the purpose of ascertaining the true polarization response of the sulfide/magnetite-rich material intersected at depth in the drilling. Limited logging of drill holes CA-1 and CA-3 was performed and is discussed in a memorandum to R. L. Redmond from W. L. Wilson dated July 29, 1966. The surveys were performed with very short electrode

spacings using a conventional inline 3 array for purpose of determining the polarization response near to the drill hole. The work was performed at frequencies of 0.1 and 1.0 hertz in a conventional frequency domain mode of operation.

In drill hole CA-1 the induced polarization log was run from 1370 feet to 1510 feet. Over this interval, the average pyrite/pyrrhotite content was 2.1 percent as reported by Lawrence and Redmond in their technical paper, September, 1967. The drill hole induced polarization log had an average response over the interval of 6 PFE which is likely indicative of the order of 3 percent sulfides by volume, a good comparison to the determined pyrite/pyrrhotite content. Over the same interval, the total iron analysis was 10.50 percent which is equivalent to the order of a little better than 4 percent magnetite by volume. Therefore, it would appear that the magnetite itself is not responding to the induced polarization technique, not an uncommon occurrence.

In drill hole CA-3 the induced polarization log was run from 2600 feet to 2590 feet. Over this interval, Lawrence and Redmond report the average pyrite/pyrrhotite content of 6 percent. The induced polarization log had an average response of 9 PFE units indicating about 5 percent sulfides by volume over the interval. This is an excellent check. In addition, the total iron by analysis was 39.02 percent by weight reflecting an average

magnetite content by volume of approximately 24 percent. Again, conclusive evidence that the magnetite in the Calico area is not responding to induced polarization techniques. It is obvious that induced polarization responses of anomalous levels will be indicative of sulfides and not magnetite-rich zones.

4. Magnetic Surveys

The magnetic data available over the Calico area has resulted from at least three independent surveys, two of which were ground surveys and one an airborne survey. The airborne survey is in all likelihood excellent data in that it was flown by Aero Service Corporation, Philadelphia, Pennsylvania, a very reputable airborne geophysical contractor. The resulting data, however, on the other hand, leaves a lot to be desired. The data reduction and contour presentation is a very amateurish job with inconsistencies, the rule and not the exception. Many of the sheets have the following note:

"Scale inconsistencies and distortion in photo mosaics preclude positive joining of sheet numbers ___ and ___."

This condition is severe enough that magnetic features can be displaced upwards of one half mile very easily. It would appear that the original data was likely of excellent quality and that the data reduction and final presentations were done by other than Aero Service and likely by people unfamiliar with good geophysical data reduction techniques.

Sumner in his report recommended that this data be returned to the original contractor for remapping on a controlled base map. In addition, I have previously recommended to Occidental Minerals Corporation that this valuable and extremely useful data be returned to Aero Service Corporation for remapping. Again, I strongly urge that if further exploration activity is going to be performed in the Walker River Indian Reservation that this data be returned to Aero Service at earliest convenience for accurate reduction and replotting of the resulting information.

B. W. Adams, in his report dated February 28, 1969, was presented a tracing of this same airborne data as his Exhibit A. Apparently, he has arbitrarily joined the several sheets in order to make a consistent presentation. This data must be used with caution in that magnetic features may be displaced and/or distorted up to half a mile.

The ground magnetic data consists of two independent surveys and this data also leaves a lot to be desired. One survey consists of a series of 34 crude profile plots that are not titled and undated. It was further determined that this data does not agree with either the airborne data by Aero Service Corporation or the other published ground data described below as to magnetic intensity values or horizontal scale. Thereby, no sense

could be derived from this data and in view of the uncertainties of its origin, this data has been rejected and not used for any further interpretive analysis.

The other available ground magnetic data is contained in the technical paper by Lawrence and Redmond, September, 1967. This data is vertical intensity data run with a Jalander magnetometer at an unknown date and by unknown operators. The data, however, appears to be of reasonable caliber although its extent horizontally is quite limited. Interpretation of this data has yielded solutions that are compatible with those obtained from the airborne data and therefore it can be assumed that this data is of sufficient caliber to be utilized. As mentioned above, this data does not agree with the other profiles supposedly taken across the same Calico feature.

In order to properly interpret the magnetic data over the Calico Prospect, it is extremely useful to have physical property determinations and total magnetite content of the body as derived from the drilling in order to check the geophysical interpretations. Fortunately, Dr. John S. Sumner of the University of Arizona has made a magnetic susceptibility determination on drill core samples from the Calico area and the results are reported in his letter to R. L. Haxby, January 14, 1967. For the magnetite body, his magnetic susceptibilities range up to

161,500 x 10^{-6} cgs units. Averaging his measured values for all of the magnetite samples gives rise to an average susceptibility of 54,900 x 10^{-6} cgs units. This value, in terms of magnetite, reflects a volume content the order of 18.3 percent.

Additional information of interest is the overall magnetite content of the intercepted magnetite body by the drill holes. This information is not readily discernable from the data at hand. Consequently, Arthur R. Still has supplied me with information on analysis of magnetite by wet magnetic separation techniques in an experimental test performed in Hibbing, Minnesota for six selected drill core samples from drill hole numbers CA-1 and CA-3. This data was analyzed and has resulted in a relationship between total iron content as determined by conventional assay techniques and the percent magnetite by volume. In that this relationship might be useful in the future, it is herein presented. If FE equals the total iron assay in percent and MAG equals the volume percentage of magnetite, then the relationship is given by:

$$MAG = 0.17(FE)^{1.35}$$

The overall total average iron assay value for all the intercepts of these drill holes is 26.05 percent FE. Using the above relationship, this is equivalent to 14.1 percent magnetite by volume. This figure is in very good agreement with the

derived content from the selected magnetic susceptibility determinations by Sumner.

This information thereby give us a basis for checking the interpretation of the data.

The airborne magnetic data and the ground magnetic data have been interpreted following conventional techniques and this data has yielded the average solution for the magnetite-rich body as follows:

Average Magnetic Susceptibility	18,000 x 10^{-6} cgs units
Average Depth to the Top	1500 feet
Average Horizontal Width	2000 feet
Average Dip	75° to 90° NE

On the attached interpretation overlay is indicated the position of the magnetic body. Drill holes CA-1, CA-3, CA-4, CA-5 and CA-6 all intercept this body and this is in agreement with the interpreted outline. Drill hole CA-2 on the other hand, did not intersect the magnetite and as shown, this drill hole is very near the southwestern edge of the interpreted zone and perhaps this drill hole wandered somewhat to the southwest and just missed the magnetite rich zone. The physical delineation of the body appears to agree pretty well with the other data, particularly the drill hole information.

The magnetic susceptibility is much lower than it should be. This is not uncommon in magnetic work wherein remanent magnetization is present which can add or subtract vectorily from the induced magnetization due to susceptible magnetic material in the present earths magnetic field. Taking an average magnetite content, as determined from the magnetic susceptibility measurements and the analysis of magnetite content, we would anticipate a total magnetic susceptibility as measured at the surface of the order of 40,000 x 10^{-6} to 50,000 x 10^{-6} cgs units. Thereby, it would appear that remanent magnetization is present in this magnetite-rich zone and that the remanent magnetization vector is subtracting from the inducing field. This is not an uncommon occurrence in Nevada. Sumner, in his analysis of samples, did not determine remanent magnetization but only the true magnetic susceptibilities. Sumner did however, point out the problem of remanence and did suggest that remanent magnetization measurements be made on samples of this material.

As long as the remanent magnetization vector is directly opposing the earths inducing field, then our interpretation suffers only in that we think there is less magnetite in the buried bodies than is in actuality. However, this discrepancy will not normally disturb the delineation solution and therefore the depth, width, and dip of the body should be realistic.

5. Induced Polarization-Resistivity Surveys

The induced polarization-resistivity data from the Calico area consists of several separate surveys. The earlier data resulted from a survey by McPhar Geophysics, Ltd., Toronto, Ontario and while all of the data was not available to me for review, selected profile lines were available as presented in the technical paper by Lawrence and Redmond, September, 1967. This data is not of good quality in that it suffers badly from electromagnetic line coupling effects due to the very low resistivities in the vicinity of the Calico hills. The other survey of the Calico area was performed by Huntec, Ltd., Toronto, Ontario and at least in part this data is not of much use in that inaccuracies are present due to extreme telluric noise problems as well as some electromagnetic coupling effects.

As pointed out above, the purpose of the induced polarization-resistivity survey was a direct attempt to recognize sulfide rich zones at depth and in particular it was projected that such a tactite zone might exist on the hanging wall side (northeast side) of the magnetite-rich zone. Therefore, the survey, in particular by Huntec, was designed to investigate this possibility.

The available McPhar induced polarization-resistivity data consisted of data from four lines, 72.5NW, 13,250NW, and the NW-SE

baseline. On the baseline, strong electromagnetic coupling effects are noted particularly to the northwest where the resistivities drop considerably. However, in the vicinity of drill hole WC-1 there appears to be somewhat of a residual over and above the coupling effect. The data for this line was run at frequencies of 0.07 and 1.25 hertz. At these frequencies, strong coupling effects would be noted. A dipole length of 1000 feet was used.

Line 13,250 lies off of the northwest end of the main Calico magnetic anomaly. Electromagnetic coupling effects are very strong and yet a clear residual anomaly above the coupling effect is noted centered about station 7NE where drill hole WC-1 is located. This drill hole intersected sulfides at a depth of 300 feet and reportedly contained greater than 3 percent sulfides by volume. This line was surveyed with a dipole length of 500 feet at reported frequencies of 0.7 (?) and 1.3 hertz. An IP anomaly should be obtained from the sulfides and correlation is quite good although a good interpretation of the data is impossible with the over-riding and masking effect of the electromagnetic coupling effects.

Line 72.5NW also has strong electromagnetic coupling effects and no recognition of a residual anomaly can be noted in the data even though this line crossed CA-4 which intercepted

greater than 5 percent sulfides by volume at 1150 feet. This line was surveyed with a dipole length of 1000 feet at frequencies of 0.7 (?) and 1.3 hertz. The lack of response from the sulfides in drill hole CA-4 is not completely explainable unless the volume of sulfide material in the vicinity of CA-4 is not sufficient to give rise to a measurable surface effect. To be sure, the coupling effects will mask true induced polarization response and this may well be the case in the data from this line.

Chronologically, the next induced polarization-resistivity survey was performed by Huntec, Ltd. in the summer of 1968. This consisted of dipole-dipole surveys with dipole lengths of 1000 feet on lines 1500NW, 3000NW, and 4400NW. This data was run with what Huntec terms their older system and separation were only possible to n = 3. W. A. Finney, geophysicist for Huntec, Ltd. has advised me in his letter of March 28, 1969 of the following comments pertaining to this particular set of early data. In that this is important criteria, I quote from his letter verbatim.

> "My own feelings about the results is that the resistivity values for n = 1, 2, and 3 are valid and these were repeatable with reasonable accuracy. These appear in the field notes as the V_p readings... The V_s readings (i.e. chargeability) for n = 1 and 2 on all lines are considered fairly good and the drafted profiles of chargeability are shown as solid lines. The same cannot be said for n = 3. In this case, repeatability was poor and in some cases, no satisfactory readings could be obtained."

I agree fully with the comments of W. A. Finney in that the n = 3 data for the induced polarization response should be completely ignored. Consequently, the earlier data only reflects n = 1 and n = 2 data and this is not adequate for exploring to large depths. The only apparent anomalous response at n = 2 and here it is very questionable but worthy to point out, is on line 3000NW between stations 2NE and 4NE. This slight rise in the n = 2 data may be suggestive of a polarization response at depth. The early data from lines 1500NW does not show much of any response other than a very very slight increase in the vicinity of station 0. The early data from line 4400NW has a very probable response starting to build up with the n = 2 data again in the vicinity of station 0. In that lines 1500NW and 4400NW have been repeated with better data, no further comment here is necessary.

The next set of data chronologically is also by Huntec, Ltd. and was run in early 1969. By personal communication, W. A. Finney considers this data fairly reliable and certainly more reliable than the earlier work. New equipment was used for this work in 1969 and this has given rise to more extensive data, readable to n = 4 with better rejection of telluric noise and in particular, electromagnetic line coupling effects. In the personal communication from W. A. Finney on April 5, 1969, he considers the data for line 4400NW very reliable including the n = 4 information. Finney further feels that the data for

line 1500NW is good reliable data to the northeast end of the line but may be somewhat in question to the southwest where the low resistivities of the lacustrine sediments have increased the noise and masking effects. The data for lines 0, 10E, and 10W he also feels are reasonably reliable.

It should be pointed out that the data measured by the old system and the new system of Huntec equipment come up with different magnitudes of anomalous responses. The relationship, as derived from the data, is approximately as follows:

$$\frac{\text{old data response}}{\text{new data response}} = 2.5 \text{ approximate}$$

Thereby, one must be careful in comparing old and new data in recognition of anomalous induced polarization features. The same problem does not exist in the resistivity data.

Line 4400 NW indicates a clear cut anomalous response centered in the vicinity of drill hole CA-1 and the grouping of CA-5 and CA-6 off the section. These drill holes intercepted greater than 4 or 5 percent sulfides by volume at an average depth of just over 1300 feet. Interpretation of this anomalous feature on line 4400NW indicates a response due to sulfides to the order of 5 percent by volume at an interpreted depth in excess of 1000 feet. This would appear to be in very good agreement with the known conditions. The new data from line 4400NW agrees fairly well with the old data from line 4400NW although there are some

discrepancies noted. In the new data, response is available for n = 1, 2, 3, and 4 so that there is no question about the interpretation thereof.

The data for line 1500NW northeast of station 2NE appears quite flat and does not suggest any appreciable sulfide volume of material at depth here. To the southwest from station 2NE there is some questionable response trying to develop in the n = 4 data. In particular, the reading at station 2NE and 3SW are anomalously high but there are three stations inbetween that are merely background. Thereby, it is difficult to interpret this with any degree of satisfaction.

In particular a serious question arises in that drill hole CA-3 drilled at station 0 on this line intercepted greater that 5 percent sulfides at 2000 feet. Over this drill hole no anomalous response is noted. This can question the reliability of the data or possibly that the sulfides noted at the bottom of CA-3 are not very extensive and that there is no large volume of sulfides at this locale. This is a crucial problem in that the best copper values were noted in the drill core of drill hole CA-3.

It is a fundamental problem with any induced polarization technique that you cannot recognize in a surface survey small bodies

of mineralization. For this case with the depth to the top of the order of 2000 feet, the sulfide volume, if it was in a vertical dike-like form would have to be at least 2000 feet across for an apparent anomaly to be measurable at surface. Easily the mineralization associated with CA-3 could be in a much smaller body and thereby no response would be noted in the surface survey. This question cannot be resolved completely with the data at hand. It is thereby questionable if any anomalous response exists southwest of station 2NE on this line.

Line 0 is a completely background line and no anomalous response can be noted.

Line 10W there are some small anomalous values at depth in the vicinity of stations 5N to 8N but this area crosses line 0 at about station 6N and this line has absolutely no support of this anomalous indication. Thereby, it is a likely conclusion that this response is false. To the southwest on line 0, the response values build up slightly and this is likely due to coupling effects in that this data was run over the lacustrine deposits with their attendent low resistivity values.

Line 10E no anomalous response of any significance are noted in the data from this line.

Thereby, the induced polarization data has very little to offer in indicating the extent of sulfide mineralization at depth. On the attached interpretation overlay the principle indication of sulfide mineralization is noted on line 4400NW and centered just northeast of station 0. In addition from the old data we had a very questionable feature on line 3000NW centered about station 3NE. If this questionable feature is truly a response from depth, then perhaps the suggested east west strike of a polarization zone is real. From the data at hand, it is inconclusive and no further polarization information can be derived.

It is unfortunate that further induced polarization surveying was not performed in this area prior to this time. During the Occidental Minerals Corporation meeting in Reno, February 10-12, 1969, it was recommended by me and to the best of my knowledge, agreed on by others present, to do some further induced polarization work prior to drilling. In particular, it was recommended that a line northwest-southwest parallel to the baseline and 1500 feet northeast of the baseline be surveyed. This is an important line in that the data from this would likely have resolved the present questions. The position of the line and orientation was selected for various purposes. One to cover the suspected position of any tactite at depth adequately and at the same time, maximize its response and minimize the response due to coupling and telluric noise. The orientation of

this line was selected to minimize the crossing of the very low resistivity lacustrine sediments. W. A. Finney of Huntec, Ltd. has advised me in a personal communication that this line was not run at the request of Occidental Minerals Corporation. Indeed, this is most unfortunate because the data from this line conceivably could be the key to the solution of this complex problem area.

In summary, the overall quality of the various geophysical data for the Calico Prospect leaves something to be desired. The airborne and ground magnetic data are superior to the electrical data and therefore the interpretation of the magnetic data has yielded a far better solution than the corresponding electrical data. It is indeed unfortunate that decisions must be made on the results of this limited amount of reasonable quality data. However, even though some of the data was not of the best quality, a reasonable physical solution to the magnetite-rich and polarizable media at depth has been made. The summary results have been presented on the attached interpretation overlay.

The interpretation of the airborne and some of the ground magnetic data has yielded a magnetite-rich body buried beneath the Calico hills with an average magnetic susceptibility of 18,000 x 10^{-6} cgs units reflecting an apparent magnetite content the order of 6 percent by volume with a depth to the top of 1500

feet, horizontal width of 2000 feet, and an apparent steep dip to the northeast.

It has been shown by careful analysis of laboratory magnetic susceptibility measurements and calculated magnetite content from total iron assay values, that a remanent magnetization vector is present in opposition to the earths inducing field. Thereby, the true magnetite content of the buried magnetite-rich body is in excess of the interpreted amount. This in no way should effect the accuracy of the delineation solutions for this body.

With a northeast dip to the body it is anticipated that a tactite copper rich zone would lie in the hanging wall on the northeast side of the magnetic feature. Some of the induced polarization-resistivity survey information was obtained across the northeast side, however, due to the poor quality of some of this information, it was not well established that such a sulfide rich zone does exist in the hanging wall.

A clear anomalous response was noted on line 4400NW directly above the known pyrite/pyrrhotite mineralization as indicated in drill holes CA-1, CA-5, and CA-6. On line 3000NW a very questionable feature is noted on the northeast side of the magnetite zone suggesting a possible east west trend to a

mineralized zone as shown on the attached interpretation overlay.

On line 1500NW no definite response was noted above drill hole CA-3 even though extensive sulfides do exist at depth here and certainly no response is noted on the northeast side of the magnetite zone. It is felt with the limited data at hand that the sulfides in drill hole CA-3 are not extensive enough to give rise to a surface indication. This is an inherent failure of the method in that small features at great depths cannot be detected by induced polarization-resistivity techniques.

In further exploration in the Calico area or for that matter in the general Walker River Indian Reservation area, it can easily be concluded from the data at hand that magnetics, gravity, induced polarization and the resistivity method do have application when applied properly. Magnetics clearly indicates these magnetite-rich bodies and can be adequately mapped by this method. Further gravity can have a definite place in exploration for these features as a correlation follow-up method and should give rise to significant anomalies due to the dense magnetite and/or sulfide zones. Induced polarization and resistivity methods suffer the most in that low resistivity due to lacustrine deposits give rise to masking effect and noise effects such that responses from depth are hard to obtain and

recognize clearly. This should not preclude the use of these methods when properly applied in the future for exploration for the type of conditions found at the Calico Prospect.

It is indeed unfortunate that some of the previously recommended geophysical applications have not been utilized prior to commencement of the present drilling program. In view of the geological complexity, exemplified by the Calico area, geophysics, under careful guidance and supervision, should play a prominent part in any future explorations in this area of Nevada.

Respectfully submitted,

Charles L. Elliot

Charles L. Elliot

Tucson, Arizona
April 10, 1969

Attachment: Interpretation Overlay

Distribution: Arthur R. Still