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February 13, 1966

To: Robert L. Redmond, Mgr.
Walker Martel Mining Company
1080 Pine Ridge Drive
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Subject: Preliminary report of geology of the Calico area, Walker River Paiute Reservation, Mineral County, Nevada.

The Calico area lies approximately six miles north of Schurz and extends from U.S. 95 eastwards for four miles, consisting of approximately 12 square miles. The topography is gentle to the west but quite rough to the east. The elevation varies from 4300 on the flat south of the Calico Hills to 5140 feet at the highest point. Road building is difficult. Much of the area to the west and north is covered with alluvium and sand.

The Calico Hills lies in an area of Tertiary volcanics consisting of a thick section of crystal tuffs which have been intruded by later andesite, basalt, and rhyolitic dikes and plugs. Basalt flows cover part of the area to the east. The basement rock is granitic varying in composition from quartz-monzonite to diorite, which intruded Mesozoic sediments of the Lunning formation(?). However there are no exposures of the earlier sediments except for a small area of calc-silicates in Section 31. The granitic rocks are exposed only as small patches in Sections 30-31, and in a small outcrop in the southeast cornor of Section 33. All of these have been partially covered by lacustrine sediments of Lahontan age.

Pre-Tertiary Rocks

Granitic rocks outcrops principally in the extreme northwest cornor of the area near U.S. 95 in Sections 30-31, the largest outcrop being 600 by 1,000 feet in size. Here the granitic rocks varies in composition from quartz-monzonite to quartz diorite and diorite. It is usually medium to coarse grained with 30-55% plagioclase, 2-25% orthoclase, 15-25% green hornblende, 3-5% pyroxene, 2-5% quartz, 1-3% biotite, and scattered grains of magnetite. The hornblende is commonly chloritized. Quartz veins are associated with the quartz monzonite in the northwest cornor of Section 30.

The small granitic outcrop on Section 4 consists of quartz diorite with associate granite aplite and quartz veinlets carrying traces of green copper carbonates. Some limonite pseudomorphs after pyrite are present in the quartz veinlets. The rock is fine-grained, with 20-30% plagioclase showing good albite twinning, up to 55% hornblende, and 5% quartz. No contacts are observable as the area is covered with sand and alluvium. Whether this is a topographic high or a fault block could not be determined.

Granitic rock, apparently diorite in composition occur in Calico 1 drill hole at 1270 to 1441 feet. Coring was not started until 1330 feet, therefor the contact is not in the core and no evidence was available as to the nature of the upper contact of the diorite. At 1330 the diorite is almost completely silicified with only ghost outlines of wisps of chlorite after amphiboles from 2 to 8% of the groundmass, and cryptocrystallined quartz up to 98% of the groundmass. At 1330 feet the rock is fine-grained diorite with 30 to 60% amphiboles. The amphiboles are usually highly chloritized. At 1441 feet the drill hole enters a skarn zone consisting of actionlite, garnet (andradite), and epidote, with varying amounts of pyrite, pyrrhotite, chalcopyrite, and magnetite.

The spatial relationship of the granitic mass in Calico 1 drill hole to the other outcrops are obscured by the overlying Tertiary tuffs. The difference in elevation of this mass to the granitic rocks in the other outcrops may be due to the old topography, and partly to block faulting. It appears that it is caused principally by topography.

The only evidence of the older Mesozoic sediments is a small sliver of calc-silicates alongthe quartz-diorite outcrop in Section 31, but even here the relationship is obscured. The skarn in drill hole CA-1 is probably the contact metamorphism of limestone and/or dolomites of the Lunning(?) formation by the diorite intrusive, that was also responsible for the iron mineralization. This skarn shows relict banding from 25 to 85°, averaging 65°. This section of skarn is at least 1,000 feet thick.

The granitic rocks are probably Cretaceous in age, but may be of Eocene age. Further work in the region may shed light on this problem.

Tertiary Rocks

The granitic rocks are covered by a thick section of tuffaceous sediments consisting of crystal tuffs, waterlained fine-grained tuffs, and coarse-grained lapilli tuffs. In some sections fragments of other volcanics occur up to 6 inches across, but commonlu are ½ to 2 inches wide. These rocks are white to tan in color, consisting of up to 35% crystals in a hyaloline (glassy) to aphanitic groundmass, commonly with glass shard structure. They are rhyolitic to quartz -latite in composition. There appears to be two distintive beds in the section. One horizon, 8 to 20 feet, in thickness, occur 80 feet beneath the glass bed. It is fine-grained, well indurated, and tan in color, and is shown as V-15 on the geologic map. Approximately 80 feet above this bed a thin bed of black glass, 2 to 8 feet in thickness, occur directly beneath V-14 rhyolitic flow(?). This occur either as massive black glass or as fragments in a tuffaceous groundmass making up 10 to 50% of the rock.

V-1, V-15, and V-3 appear to be a continuous section, but V-15 is not apparent inthe western part of the area, therefore V-1 and V-3 are shown as the same color on the geologic map.

V-14 rhyolite, although shown as a flow(?) on the map, may be a welded tuff. It is reddish in color, with a glassy to aphanitic groundmass with 10 to 20% phenocrysts of plagioclase and glass, and with numerous fragments of other volcanic rocks. This unit only covers two small areas in Sections 9-10 in the southeast end of the area,

V-1 crystal tuffs are present in drill hole CA-1 from the surface to 1250 feet. Here they show reddish alteration colors in most of the core from the surface to 1250 feet.

The red, green, and purple coloration in the tuffs is due to alteration caused by the numerous intrusives in the area. Usually the tuff is purplish and greenish nearest the intrusive, grading into a dark to bright red color further out. Some of the whiteness appear to be due to bleaching.

Tertiary Intrusives

There are numerous intrusives varying in composition from rhyolite to andesite and basalt. Some of these appear to be controlled by the northeast faults while others appear to be controlled by the northwest structures. The acidic and intermediate intrusives are usually quite small in areal exposures while the andesite intrusives are quite large, The basalt plugs and flows are restricted to the extreme southeast end of the area, and along the northwest structure bounding the north side of the area. It also occurs along this same lineament immediately west of the highway.

Rhyolite

No detail work was done on these as they do not appear to be cloasely related to the problem of ore genesis and the present exploration activities. Some of these may be welded tuffs, partially altered.. They are usually tan to reddish in color, glassy to aphanitic groundmass with 15-50% phenocrysts of orthoclase, plagioclase, quartz, and glass. Biotite and hornblende are common.

Intermediate rocks

No detail work was done on these rocks but they appear to be intermediate in composition. They occur along a northeast trending structure. The tuffs around them show the typical purplish, greenish, and reddish coloration due to alteration caused by these intrusives.

Andesite

Andesite occurs as plugs, dikes, and sills. A thin section of a sample taken near the mouth of Calico canyon revealed the groundmass to be made up of 40% plagioclase, 5% orthoclase, 2-3% quartz, 5% green hornblende, and with scattered magnetite and pyroxene making up 1%. Phenocrysts make up 35% of the section with 5% orthoclse and 30% plagioclase, both euhedral and zoned, showing Carlsbad and albite twinning. Green hornblende crystals make up 10% of the rock. It has been slightly chloritized. Magnetic susceptibility tests at the University of Nevada showed an equivalent of ½% magnetite.

The andesite varies slightly in the other intrusives. In the plug just west of the mouth of Calico canyon the rock is diabasic(?) in texture, and may represent the throat of a vent. Usually the andesite is finer-grained to glassy near the margins. They usually show cross-cutting features.

Spatially some of these plugs appear to be flows resting on the tuff but closer inspection reveals high-angle, cross-cutting features, and typically as on the west end of the andesite plug 1,200 feet northeast of Calico 1 drill hole, the tuff on the contact is highly sheared at a high angle, and are brecciated, highly silicified, and purplish to dark red in color. Usually a few feet out the tuff is greenish in color, probably due to the formation of celadonite. Further out the tuff is bright red, and sometimes bleached to a high whiteness. The induration and silicification of the tuffs causes them to resist erosion and to stand high around the intrusive plugs giving the appearance of a flow resting on the tuff. In at least one spot one of these bodies is a sill with the top eroded off, giving the appearance of a flow. The andesite high on the hill a few hundred feet southwest of Calico 1 drill hole may be partially a sill but the main body appears to be a plug.

Quaternary Rocks

Basalt

The basalt in the northwest cornor of the area appear to be a dike along a northwest structure, while that on the north side of the area in Section 32-33 appears as vents with high-angle, crosscuting contacts. The basalt to the east occurs in several vents, and as flows dipping to the east. These rocks are dense, with some olivine, and are partly vesicular. These flows are up to 40 feet in thickness.

Lacustrine deposits

Much of the area is covered by lake sediments of Lahontan age. These vary from fine sand and gravel to water-lain vitric tuffs and clays.

Alluvium and sand

Much of the area of interest is covered by wind-blown sand, in some areas forming dunes. The alluvium and sand appear to drop off fairly rapidly along the front of the range south of Calico Hills. No estimates can be made to the north, but they are fairly shallow apparently.

Structure

There are two sets of faults in the area. The prominent northwest structure varies from N20°W to N40°W, and is parallel to the discordance described by Locke, et.al. (1940) and Ferguson and Muller (1949). There is no evidence for a large right lateral movement along this structure as postulated by Ferguson and Muller further to the southeast.

There is a prominent northeast set of faults varying from N10°E to N35°E. These appear to cut the northwest structures, but in a few places have been cut by the northwest structures. These faults may be making up along the major northwest structures in the vicinity of Schurz. The northeast faults appear to be down-faulting to the east, and may account for some of the difference in elevation between the granitic outcrops to the west and the diorite in Calico 1 drill-hole. Other minor faults do not appear to show much movement.

Conclusions

The Calico area is underlain by a large granitic mass, quartz-monzonite to diorite in composition, and possibly granitic in some places. Quartz veins and granite aplite occur in some areas. Copper sulfides and pyrite occur in some of the quartz veins. These granitic rocks intruded Mesozoic sediments, probably Lunning in age, but possibly Excelsior in age, but no data is available as to the attitude or occurrence of these units, except for the banding in the skarn.

The depth to these granitic rocks can not be estimated except by magnetic, gravity, and/or IP data. Evidently the topography was considerable at the time of the deposition of the crystal tuff. These tuffs are at least 1,300 feet thick. They in turn have been intruded by rhyolitic, intermediate, andesite, and basalt intrusives, and partially covered by rhyolitic and basalt flow. The coloration in the tuffs is caused by alteration due to these intrusives.

Considering the present data the structure does not appear to be important, but may become important as a factor in the localization of the mineralization found in Calico 1 drill-hole. However the significant structure in the granitic rocks affecting the mineralization may not be reflected in the present topography, and may be revealed only by correlation with structures in older rocks in adjoining areas.

The andesite plugs in the area of the magnetic anomaly may not affect the ore-body, if the lava came up through narrow vents. Further tests of the andesite should be made for magnetic susceptibility, and this data closely correlated with the magnetics and the geology.

[signature]

Information Circular 8511

Economic Evaluation of California-Nevada Iron Resources and Iron Ore Markets

By Lyman Moore

UNITED STATES DEPARTMENT OF THE INTERIOR
Rogers C. B. Morton, Secretary

BUREAU OF MINES
Elburt F. Osborn, Director

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Magnetite (and some hematite) crops out on the east side of Frenchie Creek canyon near its head. The exposures occur over a horizontal distance of 2,200 feet and at altitudes of from 6,000 to 7,000 feet.

The area is underlain by tuff of the Older Volcanic series. Iron minerals occur along shear zones, as replacement of the volcanic rock, as the matrix of breccia, as filling in joints, and as grains disseminated throughout the rock.

Several outcrops of iron ore occur in a discontinuous east-west zone 1,500 feet long. Samples from the outcrops analysed 28.5 to 52.7 percent iron. Surrounding these outcrops are mineralized areas containing 5 to 10 percent iron.

Development consists of magnetometer surveys, trenches, and a 100-foot adit.

Imperial

The Imperial prospect is about one-quarter of a mile north of the Frenchie Creek prospect.

Dark blue hematite and magnetite occur along a nearly vertical shear zone, as the matrix of andesite breccia and as replacement of the volcanic wallrock. Ore crops out over an area of about 400 square feet. A small area of low-grade iron bearing andesite surrounds the outcrop.

The property has been explored by trenches and one drill hole.

Jackson

The Jackson prospect is on the west side of Frenchie Creek canyon about 1 mile west of the Frenchie Creek prospect.

Hematite and magnetite occur as a replacement of tuff of the Older Volcanic series along a north-trending shear zone. The replaced zone, which has been developed over a length of 200 feet, is about 120 feet wide. The magnetite and hematite replacement is concentrated in narrow layers of the tuff.

Pumpkin Hollow Area

The Pumpkin Hollow deposit is 8 airline miles southeast of Yerington at an altitude of 4,900 feet (fig. 47).

The United States Steel Corp. located more than 180 claims in the area following the discovery in 1960 of a large magnetic anomaly by means of aeromagnetic exploration. Subsequently, the company did considerable drilling and other exploration. In 1969 U.S. Steel applied for mineral patents on claims covering portions of the anomaly reported to contain 250 million tons of ore grading somewhat under 40 percent iron and about 0.3 percent copper. Ore was stated to occur in four separate bodies, three of which were amenable to open

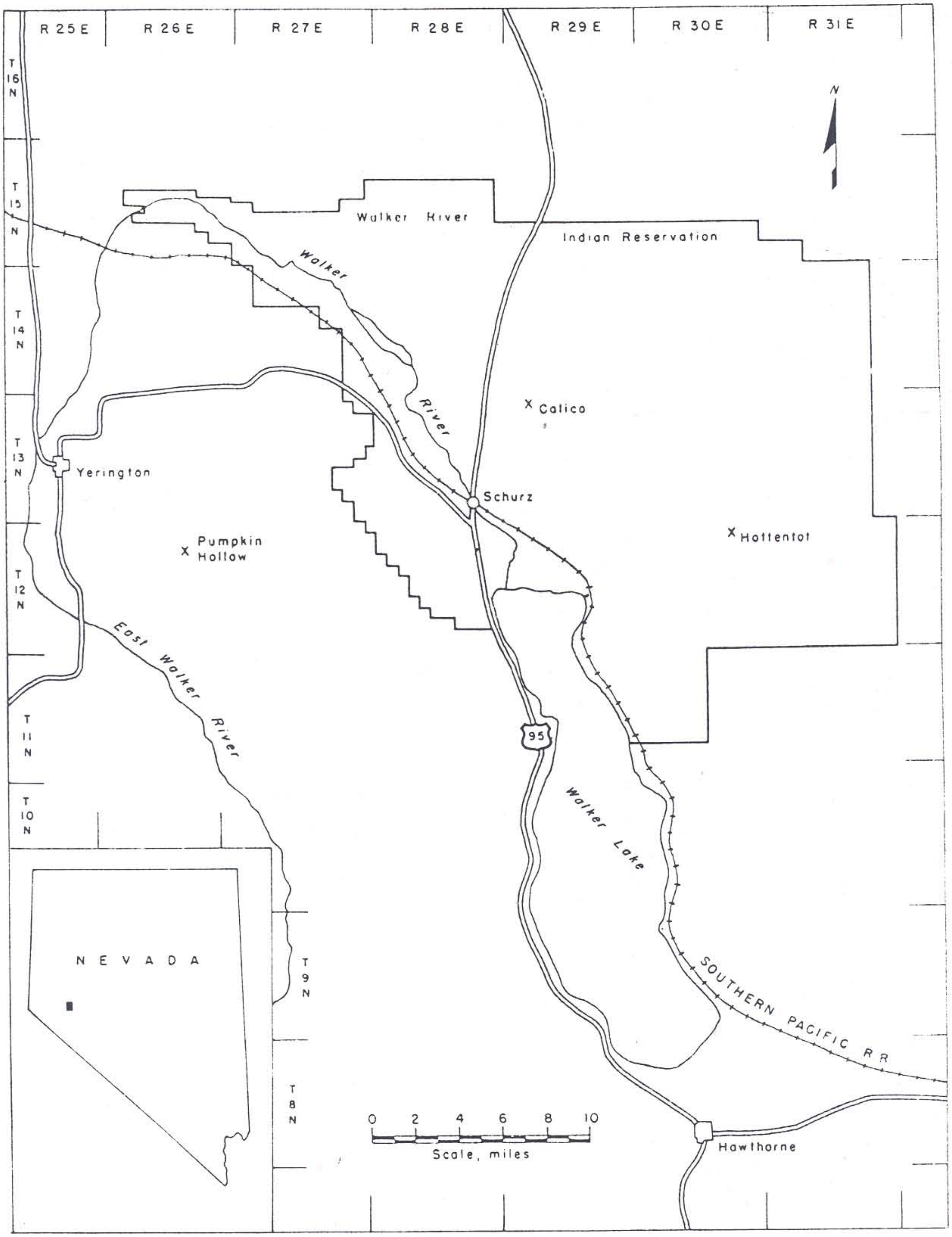

FIGURE 47. - Pumpkin Hollow and Walker River Areas. (Adapted from report by Edmond F. Lawrence and Robert L. Redmond, pres. at SME fall meeting 1967.)

pit mining. No information was available about drilling results in the remainder of the anomaly.

The ore bodies occur in a thick series of limestone, shale, chert, and tuff beds which have been altered by pyrometasomatic processes to skarn, marble, and various metamorphic rocks. Dikes of quartz monzonite occur in the mineralized area. Overlying the sedimentary series are unmineralized latite and rhyolite flows, with a thickness of up to 500 feet, which in turn are covered with shallow overburden. Magnetite is the predominant iron mineral. Copper occurs as chalcopyrite. Iron sulfides are abundant. Other hydrothermal mineral are serpentine, talc, chlorite, calcite, quartz, and epidote.

The deposition of ore minerals favors certain beds (most frequently limestones) which have been replaced by massive magnetite. Intervening beds are barren or contain low-grade material. Disseminated magnetite also occurs in some portions of the ore zone. Beds in the ore-bearing sedimentary series have a moderately steep dip and apparently continue to depth.

Walker River Area

The Walker River iron-copper deposits occur along a 25-mile northwest-trending zone which extends from 11 miles north to 19 miles southeast of Schurz (fig. 47). Topographically, the area is a wide expanse of desert valleys and hills with altitudes ranging from 4,100 to 4,800 feet. The area is entirely on the Walker River Indian Reservation. It has been leased by Walter Martel Co. and Occidental Minerals Corp.

The deposits were discovered by geologic reconnaissance, ground magnetic prospecting, and aeromagnetic prospecting. They have been further explored by other surface geophysical methods, geochemical surveys, and diamond drilling. Nearly all the iron resources discovered are in the Calico deposit. The Hottentot deposit contains small iron resources. Copper deposits containing subordinate iron have also been discovered in the area.

Calico

Location, History, and Production. - The Calico deposit is 6 miles north of Schurz on the gentle southwest slope of the Calico Hills at an altitude of about 4,600 feet (fig. 47). U.S. Highway 95 is 2 miles west of the area. The deposit was mapped in 1963 by aeromagnetic methods. Occidental Minerals Corp. subsequently acquired an interest in the property. There has been no production.

Geology. - The area is overlain by at least 1,300 feet of barren Tertiary and Quaternary rhyolitic tuffs and associated intrusives. The pre-Tertiary surface was composed of Mesozoic sandstone, shale, and limestone, and intrusive Mesozoic quartz diorite.

Extensive skarn zones containing garnet, actinolite, epidote, and other contact minerals developed in the sediments at their intrusive contacts. Large quantities of magnetite and notable quantities of pyrite, pyrrhotite, and chalcopyrite occur in the contact zones.

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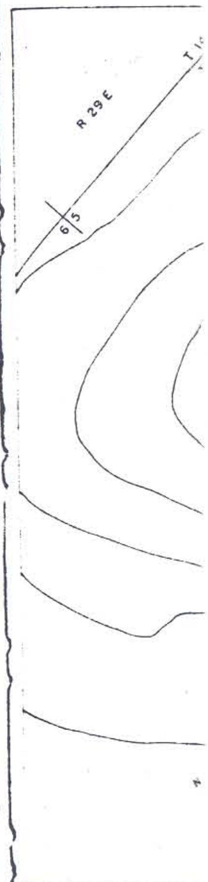

FIGURE 4

The deposit is adjacent to a northwest-trending fault zone which has a large lateral movement. Small faults parallel to this zone cut the ore deposit but show only minor horizontal displacements. Small northeast-trending faults also cut the deposit.

Drill holes in the contact zones intersected thicknesses of 1,210 to 2,325 feet of magnetite and chalcopyrite-bearing material containing an average of 24.5 percent iron and 0.076 percent copper. The holes were bottomed in material containing from 14 to 23 percent iron and 0.05 to 0.17 percent copper. Wall rocks are mainly skarn, hornfels, and quartz diorite.

<u>Exploration and Development</u>. - Following the aeromagnetic survey of the Calico magnetic anomaly a ground magnetometer survey was made. Observations were taken at intervals of 25 to 200 feet along northeast-southwest lines that were spaced from 100 to 750 feet apart. The ground survey outlined an area 6,000 feet long and 1,900 feet wide in which the magnetic intensity was more than 2,200 gammas. The maximum intensity was 3,400 gammas (fig. 48).

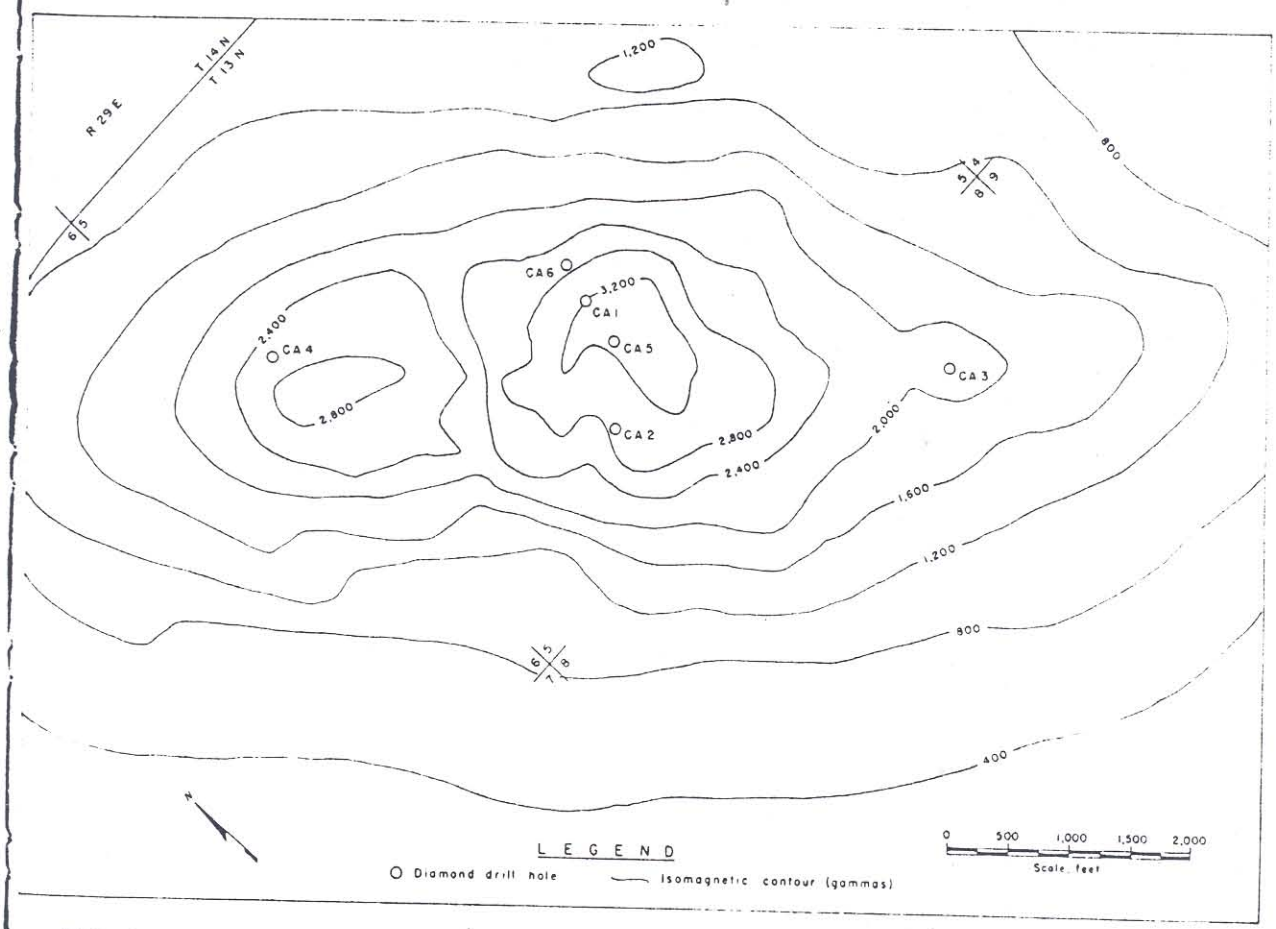

FIGURE 48. - Calico Magnetic Anomaly and Drill Hole Locations. (Adapted from report by Edmond F. Lawrence and Robert L. Redmond, pres. at SME fall meeting 1967.)

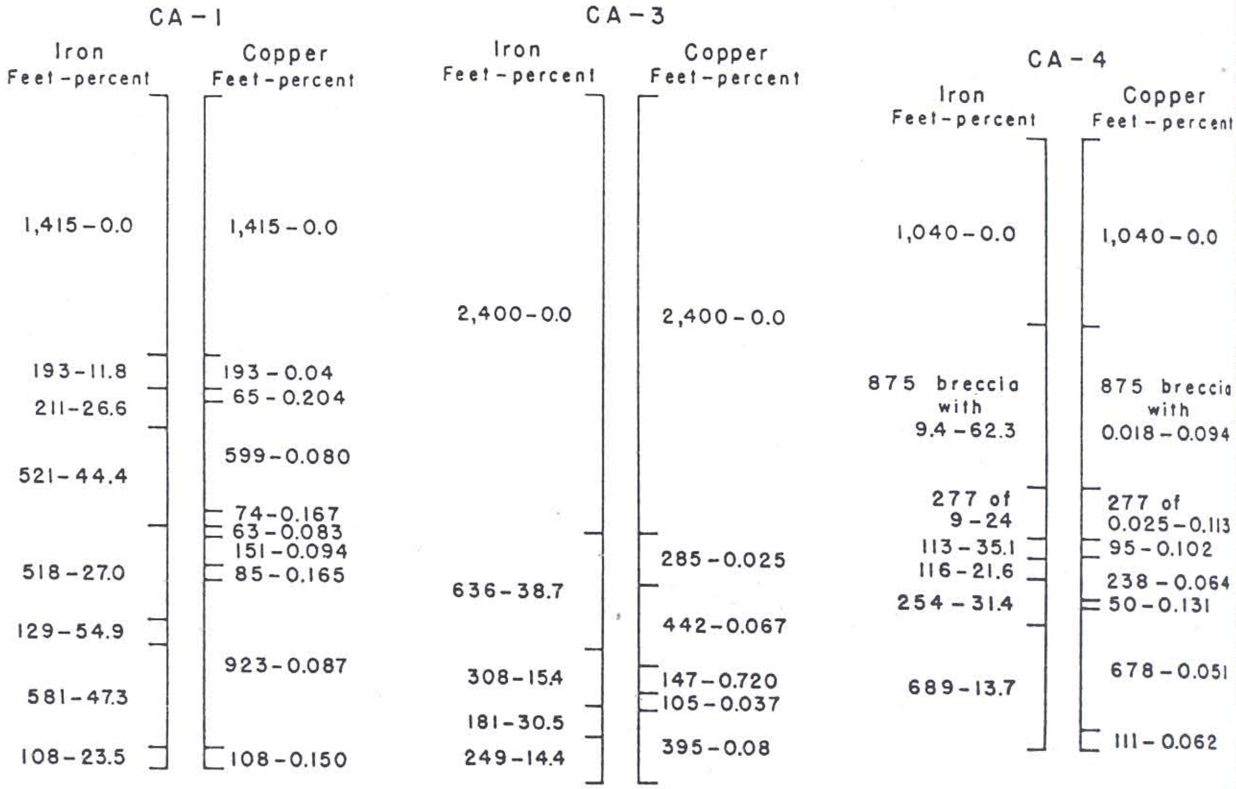

FIGURE 49. - Analyses of Drill Hole Samples in Calico Iron Deposit. (Adapted from report by Edmond F. Lawrence and Robert L. Redmond, pres. at SME fall meeting 1967.)

Six holes were drilled in the magnetic anomaly to depths ranging from 2,560 to 3,633 feet. The holes indicated a body of plus-20-percent iron material over 5,000 feet long, 2,000 feet wide, and more than 2,500 feet thick. About 1,400 feet of barren volcanic rock overlies the mineralized material (fig. 49).

Copper ore was searched for with induced polarization surveys which outlined zones of high electrical conductivity extending outside the area containing magnetite. One drill hole in an area of high conductivity and low magnetic intensity encountered only small quantities of magnetite but about the same concentrations of pyrite, pyrrhotite, and chalcopyrite as were found in the magnetic zone.

Ore Reserves. - Based on the magnetic survey and exploratory drilling (14), it is estimated that the Calico deposit contains a very large quantity of material with an average grade of 20 percent iron and 0.07 percent copper. High-grade portions of the deposit contain a large tonnage of ore with an average grade of 44 percent iron.

Economic Potential. - Open pit mining operations would be uneconomic because of the thick capping of barren rock. The overall stripping ratio for the resource of 20 percent iron is 3.5:1.0. About 900 million tons of rock would have to be stripped before large-scale open pit ore production could be started. This would entail an enormous capital expenditure which could not be amortized at the indicated consumption rate of iron ore in the regional market. Underground mining methods are indicated. The ore is stated to be suitable for block-caving and costs should be similar to those now achieved in high-tonnage operations of this type. Only the higher grade portion of the ore body can be economically mined.

Metallurgical tests on drill-core samples indicate that magnetic methods will yield a concentrate containing 62 to 69 percent iron, 1.9 to 2.5 percent sulfur, and less than 0.02 percent copper. Flotation methods will yield a concentrate yielding 65.3 percent iron plus a bulk sulfide concentrate containing 12.6 percent copper (14, p. 8).

Hottentot

Location, History, and Production. - The Hottentot deposit is 12 miles east of Schurz on the north end of the Gillis Range at an altitude of 4,800 feet (fig. 47). The deposit was discovered in 1963 by personnel of Idaho Mining Corp. and Martel Mining Co. while making a geologic reconnaissance of the area for iron and iron-copper deposits. Magnetite float was traced to a small outcrop. A preliminary ground magnetic survey gave encouraging results and was followed during the next 2 years by detailed ground and aerial magnetic surveys, geologic mapping, electrical resistivity surveys, geochemical surveys, and diamond drilling. An interest in the property was subsequently acquired by Occidental Minerals Corp. There has been no production.

Geology. - The area is composed principally of Tertiary and Quaternary flows and tuffs and of basaltic and andesitic intrusions. A few small areas of Mesozoic diorite and metamorphosed Mesozoic sediments crop out.

The deposit occurs adjacent to a strong northwest-trending fault zone, which shows a displacement along the strike of over 2,000 feet. Many small north-striking and east-striking faults also cut the mineralized area.

Magnetite, partially oxidized to hematite, occurs in pods and lenses in the diorite. Small amounts of pyrite, actinolite, chlorite, quartz, and calcite are present. Walls are silicified fine-grained diorite.

Exploration and Development. - A detailed ground magnetometer survey was made over an area that extends about 1 mile north-south and 1.5 miles east-west. An extensive aeromagnetic survey was made of the same area and the surrounding land. Three anomalies were delineated with areas of 30, 2, and 0.5 acres and intensities of 2,000, 4,000, and 3,000 gammas, respectively. Self-potential and resistivity surveys also were conducted over the area, but no nonmagnetic anomalies were found. A hole drilled in the 2,000-gamma anomaly intersected an ore zone 32 feet thick containing about 50 percent iron ore at a depth of 713 feet. Holes drilled in the 4,000- and 3,000-gamma anomalies intersected from 63 to 177 feet of ore averaging 50 to 58 percent iron at depths of 41 to 177 feet (15).

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REPORT

REINTERPRETATION OF AIRBORNE MAGNETIC DATA

WALKER RIVER INDIAN RESERVATION

MINERAL, LYON AND CHURCHILL COUNTIES, NEVADA

for

Occidental Minerals Corporation

Wheat Ridge, Colorado

Registered Professional Engineer (Geophysical) CERTIFICATE NO. 6877 CHARLES L. ELLIOT Date Signed 5-28-70 Arizona U. S. A.

Charles Elliot

ELLIOT GEOPHYSICAL COMPANY
Mining Geophysical Engineers
4653 East Pima Street
Tucson, Arizona 85712

Ref: OC9E

This report is an adjunct to my report "Interpretation of Airborne Magnetic Data, Walker River Indian Reservation, Mineral, Lyon and Churchill Counties, Nevada" for Occidental Minerals Corporation, Wheat Ridge, Colorado, December 19, 1969. The aforementioned report comprised the reinterpretation of airborne magnetic data from only a part of the data available for the Walker River Indian Reservation and such area had been selected last fall for reinterpretation by Arthur R. Still. Subsequent to this and as a result of that reinterpretation, it was decided to recompile the remaining data for the Walker River Indian Reservation. This report thereby discusses the results of this recompilation outside of the area discussed in my previous report of December 19, 1969.

The original airborne magnetic data for the Walker River Indian Reservation area was flown by Aero Service Corporation in 1963 for the account of Walker-Martel Mining Company. The reduction of this data in the form of 15 sheets that were previously available to Occidental Minerals Corporation were very poor quality such that good interpretations of this data could not be realized. Aero Service Corporation is a reputable airborne geophysical contractor, however, the resulting data reductions were apparently done by personnel of Walker-Martel Mining Company who were completely unfamiliar with good geophysical data reduction techniques. As a result this data was very difficult to interpret into meaningful geologic solutions. A case in point is the results for Black Eagle South as reported in my previous report of December 19, 1969. This outstanding intrusive feature was not clearly defined in the original data reductions and yet after their recompilation, this feature was clearly indicated and its geologic significance readily discerned.

As a result of this, it was decided to recompile the remaining data from the Walker River Indian Reservation. Lockwood, Kessler & Bartlett, Inc., Pasadena, California were again selected to recompile the remaining data as they had performed in the selected area. Lockwood, Kessler & Bartlett followed the same procedures as outlined in my previous report for the reduction of this data. One difference worthy of note is in the northwestern extreme of the Walker River Indian Reservation data area, the magnetic data was not obtained from the 1963 survey by Aero Service Corporation. The data here was obtained by Walker-Martel from an unknown source and the only raw data available to us was a contoured magnetic sheet of this restricted area. This data appears to be of excellent quality and was tied to the remaining majority of the Walker River Indian Reservation by tie lines flown by Aero Service Corporation in 1963. Therefore all of the data for the Walker River Indian Reservation is contiguous.

The final presentation by Lockwood, Kessler & Bartlett, Inc. of the magnetic data is at a scale of 1 inch = 1/2 mile using the four 15' topographic sheets in the area of interest as the best available base maps. In that most of our geological information is available at a scale of 1 inch = 1 mile and thereby to facilitate analysis and correlation with this available geological information, the output of Lockwood, Kessler & Bartlett, Inc. was reduced photographically to a scale of 1 inch = 1 mile. The airborne magnetic data at both scales is included with this report.

Pertinent references and data available for analysis of the Walker River Indian Reservation area are as follows:

1. Report - Review of All Geophysical Data, Calico Prospects, Schurz, Mineral County, Nevada for Occidental Minerals Corp., C. L. Elliot, April 10, 1969.
2. Report - Interpretation of Airborne Magnetic Data, Calico Area, Schurz, Mineral County, Nevada for Occidental Minerals Corp., C. L. Elliot, September 5, 1969.

3. Aeromagnetic Survey, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, LKB Project 9679, November, 1969, 1" = 1/2 mile.

4. Aeromagnetic Survey, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, LKB Project 9679, November, 1969, 1" = 1 mile.

5. Interpretation of Aeromagnetic Data in West Central Nevada (Project No. 1), Huntec Limited, A. Spector, February, 1969.

6. Contour Maps of Airborne Magnetic Data, sheets 1 through 15, Aero Service Corporation, Airborne Magnetic Survey, May, 1963.

7. Topographic sheet, Allen Springs, Nevada, 1951, 15' quadrangle.

8. Topographic sheet, Schurz, Nevada, 1964, 15' quadrangle.

9. Topographic sheet, Weber Reservoir, Nevada, 1951, 15' quadrangle.

10. Topographic sheet, Gillis Canyon, Nevada, 1964, 15' quadrangle.

11. Geologic Map of Lyon, Douglas, Ornsby and part of Washoe Counties, Nevada, J. G. Moore, 1:200,000, 1961, Mineral Investigation Field Studies Map No. MF-80.

12. Geology and Mineral Deposits of Mineral County, Nevada, Nevada Bureau of Mines Bulletin 58, D.C. Ross, 1961.

13. Progress Geologic Map of Nevada, B. Webb, R.B. Wilson, July 1962, 1:500,000.

14. Composite Map Churchill, Lyon and Mineral Counties, Walker Indian Reservation, Nevada, 1" = 1 mile compilation by Occidental Minerals Corp. personnel, January, 1969.

15. Interpretation of Airborne Magnetic Data, Walker River Indian Reservation, Mineral, Lyon and Churchill Counties, Nevada for Occidental Minerals Corporation, Wheat Ridge, Colorado, December 19, 1969, C. L. Elliot.

16. Aeromagnetic Data, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, L.K.B. Project 0522, 1" = 1/2 mile, March 1970, four sheets.

17. Aeromagnetic Data, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, L.K.B. Project 0522, 1" = 1 mile, March 1970, four sheets.

The purpose of this review and reinterpretation of all of the airborne magnetic data from the Walker River Indian Reservation was to re-evaluate if any other magnetite-rich tactite zones such as is known at Calico and Hottentot and/or any other buried intrusive bodies were indicated within the limits of the survey area. The ultimate objective here was to reduce the Walker River Indian Reservation area to only those significantly interesting zones that might be withdrawn and held over a longer term by Occidental Minerals Corporation for further evaluation and exploration. With the background knowledge in a magnetic sense for the Calico, Black Eagle South and Hottentot areas, reasonably good interpretations of the airborne magnetic data can be readily accomplished.

Quantitative techniques were employed to derive the most probable values of magnetic susceptibility of the hidden magnetically causitive bodies as well as their geometric aspects of horizontal extent and interpreted depth below ground surface. Conventional quantitative geophysical techniques of interpretation were employed to derive this information.

Accompanying this report are the following maps and sheets:

1. Interpretation Overlay, Airborne Magnetic Data, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, 1 " = 1 mile, May, 1970.
2. Aeromagnetic Data, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, L.K.B. Project 0522, 1" = 1/2 mile, March 1970, four sheets.
3. Aeromagnetic Data, Walker River Indian Reservation, Churchill, Lyon and Mineral Counties, Nevada, L.K.B. Project 0522, 1" = 1 mile, March 1970, four sheets.

A perusal of the accompanying aeromagnetic survey data (four sheets from the recompilation of Lockwood, Kessler & Bartlett, Inc.) indicate a lot of magnetic activity within the Walker River Indian Reservation and with a very pronounced northwest-southeast trend. This trend is compatible with the regional geology as known in the Walker River Indian Reservation. Cutting across this northwest-southeast magnetic trend are indications of many cross faults with a northeast-southwest trend. This again is known from geological considerations and supports the work of Spector in his report of February, 1969 in which he has proposed many northeast-southwest cross faults displacing the generalized northwest-southeast structural trends.

Further, a perusal of the aeromagnetic data will suggest many high gradient responsive zones indicative of young surface volcanic features and again these are known to exist extensively in the Walker River Indian Reservation. Previous analysis of magnetics in this section of Nevada has indicated that these young Tertiary volcanics do respond quite moderately in a magnetic sense and therefore these features tend to mask any significant magnetic anomalies from buried magnetic features such as tactite zones and intrusives.

Predominantly tactite zones have a very strong response and therefore the surface and airborne expressions of buried tactite features should normally stand out above the magnetic level of surface Tertiary volcanics. This is not necessarily always the case but would appear to be a reasonable conclusion. Magnetic response of buried intrusions on the other hand are not normally large responses and therefore they can be easily masked by the higher gradient, higher level response of the surface Tertiary volcanics. Consequently, in volcanic covered areas as expressed magnetically, buried intrusives could exist and we would not necessarily be able to recognize these features. This concept was amply demonstrated at Black Eagle South in which surface Tertiary volcanics were responding giving rise to part of this response and yet the magnetic response of the buried intrusive of a reasonably high magnetic susceptibility clearly showed above the surface volcanic response.

On the accompanying airborne magnetic survey sheets the most outstanding magnetic feature is the Calico deposit itself located generally in sections 5, 6, 7, 8, of T 13 N, R 29 E. The next most significant magnetic features are the responses for Black Eagle South located in sections 32 and 33 of T 14 N, R 31 E and the Hottentot deposit located in undivided territory approximately located in equivalent section 2, T 12 N, R 30 E. These two features are both clearly indicated in the aeromagnetic data. Further, there is the magnetic response of the Little Calico located generally in sections 9 and 10 of T 13 N, R 29 E and the predominantly volcanic indications of the Terrill Mountains feature located in sections 19, 20, 21, 28, and 29 of T 14 N, R 30 E and the Black Eagle North feature located in sections 7, 8, and 17 of T 14 N, R 31 E. These are the pronounced magnetic features within the Walker River Indian Reservation and these features are indicated on the attached Interpretation Overlay.

Also shown on the attached Interpretation Overlay are all of the interpretation points where magnetic features have been interpreted. All of the remaining points beyond those areas mentioned above do not appear to be significant magnetic features and are predominantly reflecting volcanics which are likely Tertiary volcanics at or near surface.

On the attached Interpretation Overlay is shown the boundary of the previous re-evaluation of airborne magnetic data within the Walker River Indian Reservation and as reported in my report of December 19, 1969. The boundary of the airborne magnetic coverage is also shown on the attached Interpretation Overlay.

One further anomalous feature that was just barely indicated within the limits of the airborne magnetic coverage is the feature along the east boundary of the Walker River Indian Reservation survey in T 12 N. This feature is not defined adequately for a good interpretation and it appears that the body extends outside of the limits of the Walker River Indian Reservation and therefore is beyond the scope of this report. It is however of possible interest to determine geologically a possible source for this feature. The regional airborne magnetic coverage of southwestern Nevada as available from the U.S. Geological Survey on open file as flown by Lockwood, Kessler & Bartlett, Inc., 1967, does not show any predominant magnetic feature in the vicinity of this indication and therefore this feature perhaps does not have any significance. It is predominantly outside of the Walker River Indian Reservation therefore it is beyond the scope of this report.

The significant magnetic zones within the area covered in the previous report of December 19, 1969 need no further discussion here in that they have been adequately covered in the previous report. The main significant zone not covered in the previous report is the Hottentot deposit area. From the airborne magnetic data this zone has a significant magnetic feature almost identical in shape, magnitude and gradients to that at Black Eagle South. The indicated magnetic susceptibility is 8900 x 10^{-6} cgs units reflecting a bulk average magnetite content of the order of three per cent magnetite by volume. The indicated depth below ground surface to the magnetic causitive structure is indicated to be the order of 800 feet. This interpreted depth is in excellent agreement with the known depth to the dioritic intrusive body as determined by drilling and will be covered in more detail in a subsequent report. On the basis of the similarity in anomaly and interpreted susceptibility of 8900 x 10^{-6} cgs units for Hottentot as compared to 9800 x 10^{-6} for Black Eagle South, it would seem very reasonable that the Black Eagle South causitive body is the same dioritic material as is known at the Hottentot deposit.

In summary the only area of any possible significance not covered in the previous report of December 19, 1969 is the Hottentot deposit area and this area may deserve some further work before relinguishing rights in the Walker River Indian Reservation back to Walker-Martel Mining Company. In that much is already known about the Hottentot deposit and immediate area, no further comments are necessary here in that a discussion of the Hottentot data including ground data will be covered in a subsequent report. Based on the airborne magnetic data as flown by Aero Service Corporation in 1963 and some additional data obtained from an unknown source as recompiled by Lockwood, Kessler & Bartlett, a select few significant zones are clearly recognizable as indicating buried intrusive material and/or tactite zones. These significant zones are as follows: Calico Deposit, Little Calico, Terrill Mountains, Black Eagle South, Black Eagle North and Hottentot. The Calico deposit and Little Calico areas have been adequately covered by other geophysical techniques as well as extensive geological investigations and drilling. No further work based on this study is anticipated in these areas.

Black Eagle South area has had induced polarization coverage and one drill hole has been drilled on an IP anomaly. No further work at this time is recommended at Black Eagle South.

Black Eagle North area appears to be predominantly a Tertiary volcanic indication and was covered on the ground with ground magnetics supporting this conclusion. No further work is recommended at Black Eagle North.

The Terrill Mountains area appears to be predominantly indicative of surface volcanic activity of such an extent that clear indication of any buried intrusive material is not really possible. As a consequence no further work can be recommended in this area.

The Hottentot deposit area has had ample ground magnetic coverage and some poor quality induced polarization resistivity coverage. It is anticipated that further work may be necessary here and this will be covered in a subsequent report. As far as the rest of the Walker River Indian Reservation is concerned, no economic significance can be derived from the existing airborne magnetic data and on this basis no further work of a geophysical nature is recommended in the remaining portions of the Walker River Indian Reservation.

Respectfully submitted,

ELLIOT GEOPHYSICAL COMPANY

Charles L. Elliot

Charles L. Elliot
Registered Professional Engineer

Tucson, Arizona
May 28, 1970

Distribution: James A. Anderson
Arthur R. Still
John H. Volgamore

Attachment: Interpretation Overlay
Four Sheets - Aeromagnetic Data, 1 " = 1 mile
Four Sheets - Aeromagnetic Data, 1 " = 1/2 mile

MAGNETIC ANOMALIES ON THE WALKER RIVER INDIAN RESERVATION

By

Raymond J. Garcia

August 29, 1963

To Whom It May Concern,

I, Raymond J. Garcia, acquired a B. S. degree in geology from the University of Kansas at Lawrence, Kansas in 1949. I have practiced geology and engineering continuously since that time for both federal and private agencies.

I feel that the work by Roberts and Associates on the properties discussed in the foregoing report was frugally and efficiently done. Very low overhead contributed to the high percentage of expenditure which was actually put "into the ground". There is a distinct contrast between the methods and accomplishment here and that of the mining promoter.

I certify that I have no interest or connection, financial or otherwise with any firms with holdings in the described properties. I have been retained for cash.

Raymond J. Garcia

Raymond J. Garcia

CONTENTS

ILLUSTRATIONS

INTRODUCTION

The three magnetic anomalies discussed in this report lie on the Walker River Indian Reservation. Two, the Calico and Hottentot, are in Mineral County. The third, the Aspiring, is about 1 3/4 miles north of the Mineral County line in the southwest corner of Churchill County.

The description of the land containing each of the anomalies follows:

Aspiring	W½ sec. 2, all sec. 3, NE½ sec. 4, N½ sec. 10, and NW½ sec. 11.	T. 14N.	R.29E.	MDBM
	S½ sec. 28, S½ sec. 29, all Sec. 33, S½ sec. 34.	T. 15N.	R 29E.	MDBM
Calico	W½ sec. 4, all sec. 5, E½ and E½ W½ sec. 6, N½ sec. 7, W½ and N½S½ sec. 8, NW¼ and NW¼ SW¼ sec. 9,	T. 13N.	R29E.	MDBM
	SE¼ sec. 31 and SW¼ sec. 32.	T. 14N.	R29E.	MDBM
Hottentot	W½W½ sec. 1, all sec. 2, E½ sec. 3.	T. 12N.	R30E.	MDBM
	SE¼ SE¼ sec. 34 and S½ S½ sec. 35.	T. 13N.	R30E.	MDBM

The anomalies are all easily accessable on roads traversable by passenger cars. Schurz, Nevada is the nearest town and the railhead point. To reach the Aspiring, drive 14 miles north of Schurz on Highway 95 and turn right onto a dirt road. Go 4 miles east to the Aspiring. One half mile north of Schurz, another graded dirt road intersects Highway 95. The Calico is 9 miles northeast on this road. The Hottentot is 12 miles out on a graded road extending eastward from the railroad crossing in the town. (See Walker Master Unit map in pocket.)

The topography of the areas is the typical basin and range terrain found throughout most of Nevada. Island-like hills and mountains are surrounded by lake beds dissected by shallow, sand-floored washes. The high

RJ.

points have elevations of a little less than 6,000 feet, while the lake beds average about 4,100 feet.

Temperatures vary from over 100°F. in July to -20°F. in January. The averages for these months are 75°F. and 32°F. respectively. The annual precipitation varies from 5 to 6 inches. It is acquired during a few hard rains through the spring and late summer and a few light snows in winter. Continuous mining operations can be maintained without unusual hardship or expense.

Ground cover consists of sagebrush, a few desert weeds and some coarse grasses on the lower slopes. Juniper and pinon pine form irregular patches on the hills. The lake beds are nearly all barren.

Water is available nearly always at Double Springs, about 3 miles south of the Calico. It provides enough water for nominal drilling requirements. During exceptionally dry periods, water can be had at Schurz.

GEOLOGY

Outcrops in the vicinity of the anomalies consist of a few Cretaceous granitic intrusives, Late Tertiary volcanics and some Quaternary volcanics and alluvium. The Cretaceous intrusives are mostly quartz monzonite with some granodiorite and a little albite granite.

The Tertiary volcanics are of two types. The felsic volcanics are rhyolite flows and quartz latite tuff, usually welded. The intermediate volcanics consist of rhyodacite and andesite flows, tuffs and breccia. These commonly overlie the felsic volcanics, but some reversals and intercalation prevent the establishment of clear cut age relationships.

The Quaternary volcanics are flows including trachybasalt and latite. The alluvium is mainly Pleistocene lake beds and valley fill with some slope wash and older gravels.

RJW

There are some significant limestone outcrops in the anomaly areas. On the Hottentot, the granite intrusives are surrounded by narrow bands of limestones (Triassic?) mineralized with magnettite, hematite, and copper carbonates. On the Aspiring a large limestone xenolith is embedded in the diorite mass which bounds the anomaly's east flank.

In areas adjacent to those containing the anomalies, rocks dating back to Permian time crop out. Interpretations of the rocks buried beneath the anomalies must be made from the limited outcrops at the anomalies and projections of evidence acquired in the adjacent areas.

STRUCTURE

Probably the most important structural feature near the anomalies is the Gillis thrust fault. The orogeny which fostered the thrust must have begun in Early Jurassic time concurrently with the deposition of the Dunlap formation. The early activity deformed the already deposited Luning, Gabbs, and Sunrise formations which total nearly 10,000 feet of thickness.

Folding, faulting and thrusting continued until nearly the end of the Jurassic as indicated by coarse conglomerates deposited high in the Dunlap. The precise close of this phase of tectonics is hard to determine because of the younger volcanics which mask so much of the region. It may have ended with the emplacement of the still undeformed granitic intrusives. These intrusives, as satellites of the Sierra Nevada batholith, place the end of the orogeny in the Cretaceous.

PROBABLE ORE CONTROLS

It is not surprising that the subject anomalies have such magnitude when one considers their environment. The Anaconda pit at Yerington and the United States Steel deposit at Lyon actually only hint at the potentialities of the region.

Ten miles southeast of the Calico, very near the Hottentot anomaly, lies the postulated edge of the Gillis thrust fault. Evidence in the Gillis range and the Garfield hills farther south indicates that the thrust is one of major proportions. The upper plate moved south and east over the region from a center some distance to the west. In several places the Middle Triassic Excelsior formation can be seen where it overrode the Late Triassic Luning formation.

The plane on which a thrust plate rides is, of course, a zone of tremendous shearing and abrading forces. Some less competent beds may deform plastically while harder material is pulverized. Whole formations can be cut out or left behind as the upper plate is forced along. Shear faults form whenever some resistant mass impedes the movement of a part of the moving plate.

All this crushing and fracturing form highly favorable loci for the collection of vagrant mineral solutions. The involvement of carbonate-rich rocks (Luning, Gabbs and Sunrise formations) and the common presence of post-thrust intrusives (Cretaceous granitics) increase the likelihood of emplacement of large mineral concentrations.

RJW

HISTORY OF EXPLORATION

Aspiring

In 1961, the field staff of the Idaho Mining Corporation began a magnetometer survey of an altered area seen some time previously from Highway 95. Preliminary ground surveys were made first with an Arvella magnetometer, then with a Jalander. Lines were run every 100 feet both north-south and east-west. Stations along the lines were spaced from 10 to 75 feet apart depending on progressive changes in magnetic intensities.

Roberts and Associates then acquired a sub-lease from Idaho Mining Company. Aero Service Corporation of Tulsa, Oklahoma was engaged to fly an aerial magnetometer survey. The ground anomaly was confirmed and a much larger potential area was delineated. Much ground work remains to be done in sections 28, 29, 33, 3, 4, 9 and 10. (See aero and ground magnetic maps of the Aspiring.)

Calico

The Calico anomaly was discovered by magnetometer survey run as part of an exploration program the United States Steel Corporation started in 1958. At that time, the Paiute Tribe did not own the mineral rights on the reservation. U. S. Steel staked claims and proceeded under the requirements of the statutes governing acquisition of mining rights on public land.

After considerable work had been done, the Indians won title to the mineral rights. U. S. Steel, their claims being automatically invalidated, had to begin acquisition negotiations with the tribal council. No agreement was reached.

R

U. S. Steel's activities in the Calico area were common knowledge. When they abandoned it, Roberts and Associates "rediscovered" the anomaly and secured a lease.

Aero Survey Corporation of Tulsa flew the area with a continuous recording magnetometer at 500 feet altitude on north-south lines spaced ¼ mile apart. (See Calico anomaly map.)

The Roberts group then made a check survey on the ground using a portable Jalander vertical intensity magnetometer. Cross traverses were run on 750 feet spacing while longitudinal runs were made every 600 feet. Stations were spaced from 25 to 50 feet along the lines depending on rates of change in the magnetic intensities. The aerial anomaly was confirmed by the ground work.

Hottentot

The Hottentot anomaly was found in 1961 during an Idaho Mining Corporation survey initiated to check surface alteration and mineralization. North-south lines were run every 50 feet. Stations were spaced 25 feet apart along lines. Roberts and Associates acquired an interest and a Jalander magnetometer was run on north-south lines spaced 300 feet apart. Stations were spaced 150 feet apart along lines. (A smaller associated anomaly called Little Hottentot was found. Instrument stations were spaced very closely to provide detail on the smaller area. See Hottentot anomaly map.)

In 1963, Aero Service Corporation flew the area at 500 feet altitude on north-south lines spaced ¼ mile apart with a continuous reading magnetometer. The deflection curves of the Jalander and Aero Service instruments are nearly identical.

The results of the latest survey done with an audio frequency magnetometer (Afmag) are not yet available.

GEOPHYSICAL CONSIDERATIONS

In order to get some idea of what an anomaly means in terms of type of deposit, size, and depth of burial, several techniques are available. Comparison with known deposits and their anomalies gives one a fair idea of the type and size magnitude of the deposit.

Application of theoretical geophysical analyses allows one to choose the likeliest geometric shape, the depth parameters of the indicated deposit and to check on the estimated size.

Aspiring

The Aspiring has had less detailed interpretive work than the Calico or Hottentot. Thus, the ground anomaly map may not encompass all the magnetics required for an adequate analysis. The aerial map includes several broad deep peripheral lows which have not yet been ground checked. If these lows are significant they more than double the area of the ground map. They may also indicate a porphyry copper deposit.

The area of the ground magnetic map has had some qualitative appraisal. The strong magnetic lows adjacent to the highs indicate that the negative pole or "bottom" of the responding mass. It is probably tabular and dips westerly. It must be high in metallic content because of the relatively small areal extent and high magnetic deflection.

Seladonite, a green iron silicate, discolors extensive areas north and south of the anomaly. No copper minerals were found on the surface, but seladonite occurs at Lyon and Yerington. They both contain commercial quantities of disseminated copper.

RLH

Calico

No zero gamma reading was obt ained in the surveys of the Calico. This follows the pattern of infinite thickness type deposits. They may persist to great depth with constant ore grade, may have increasing grade with depth or may change to another mineral type at depth because of vertical zoning. In any case, the Calico is a very large deposit.

There is a striking similarity between the Calico and Lyon anomalies both in size and intensity. Drilling at Lyon has found an extensive deposit of 40% iron and about 1% copper. There may be higher grade copper one one or more flands.

A comparison was made between the 3750 NW line profile and a theoretical curve computed for a horizontal cylinder. (See profile sketch.) A magnetic susceptibility of .05 cgs, about right for a 20% magnetite body, was used for the first tonnage estimate. The depth to the top of the cylinder was estimated to be about 1,500 feet and the center at about 2,500 feet giving a radius of 1,000 feet. With a length of 3,000 feet and a tonnage factor of 10 cubic feet per ton, the astonishing figure of 900 million tons of iron mineralized material was obtained.

The same theoretical curve appears if the susceptibility is raised to .10 cgs (about 40% magnetite) and a radius of 700 feet is assumed. With other parameters the same, the tonnage falls to 450 million. Of course, the higher the susceptibility (ie grade of the deposit) assigned the lower the tonnage. But one must be governed by the grades of known deposits. Similarly if the radius is reduced the susceptibility must be increased disproportionately to account for the magnitude of deflection of the anomaly. It all boils down to a very large deposit.

RJW

Hottentot

The north-south magnetic profile of the Hottentot is very steep on the south and slopes more gradually to the north. It best fits the geometry of a tabular body dipping north.

The top is 300 to 500 feet below the surface and copper-iron mineralization, like U. S. Steel's Lyon deposit 21 miles west, is the most likely occurrence. Magnetite and hematite are common; malachite and azurite are less common around the anomaly. However, in the 40 geochemical samples taken, copper concentrations were much higher in those which contained both iron and copper.

Using a length of 3,000 feet, a width of 1,800 feet, a 100 foot thickness and a factor of ten cubic feet per ton, 54 million tons results. A thickness of 500 feet is not unreasonable for an anomaly of this magnitude in iron deposits. There is a possibility, however, that the deposit caps an intrusive mass from which it is magnetically indistinguishable. This is the reason for using the 100 foot thickness for the tonnage estimate.

RECOMMENDATIONS

There is a tendency among mining and oil companies to repeatedly postpone drilling a prospect. Drilling definitely determines whether preliminary exploration money was spent wisely. It tests the veracity and ability of the technical staff. An objective analysis of the data accumulated on the subject properties indicates that additional surface work would be superfluous. Therefore, I earnestly recommend the drilling of these anomalies now. The geologic environment is exceptionally favorable. For the occurrence of phorphyry copper deposits or equivalent and/or large magnetite replacement bodies. The anomalies are definitely established and two nearby deposits (Yerington and Lyon) indicate the possibilities of the region for copper and iron deposits of very large size.

These properties have potentials like those on which the great mining companies of today were founded.

6000 0133 (0760)

HEINRICHS GEOEXPLORATION COMPANY

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

November 1, 1965

Mr. Robert L. Redmond
Martel Mining Company
1080 Pine Ridge Drive
Reno, Nevada 89502

Re: Walker River - Paiute Indian Reservation
Nevada Exploration

Dear Bob:

This is a letter report on the geophysical feasibility study made on the Hottentot prospect, Mineral County, Nevada during August 15 through 21, 1965.

Two lines of induced polarization (I.P.) were run, both approximately E-W along previous McPhar lines. Line 1 was centered at 0 N/S, 0 E/W and run on a 500 foot spacing. Line 2 was centered at 400 feet south, 800 feet east and run on a 500 foot spacing. Both lines were run using the dual frequency I.P. method with Line 1 on 0.05 and 3.0 cycles per second and Line 2 on 0.05 and 1.0 cycles per second.

Line 1 was positioned and spaced so as to sample the vicinity of drill holes #3, #4, and #5 in the depth range of about 50 feet to 300 feet. No well defined I.P. anomalism was found along the line other than that which can be attributed mainly to inductive coupling interference and random background effects. However, there is a resistivity high zone between 0 E/W and 0.25E (correlating with the fine grained intrusive on the geology map) plus an ill-defined self potential low near the 0 E/W in the vicinity of the drill holes.

Line 2 was positioned and spaced so as to test the area near Diamond drill hole #6 in the depth range of about 100 feet to 600 feet below surface on a lower high frequency than Line 1, to cut down on inductive coupling resulting from the longer spacing. Again only background I.P. effects were noted along the line and again there is a resistivity high from about 0.3E to 1.3E, likely the side effect of the fine grained intrusive 50 feet to the south. Also there is a rather well defined although low amplitude, self potential low at 0.8E correlating with DD#6.

Casual comparison of these data with the known drill hole information presents some difficulty, particularly on Line 2. However, this is reconciled after more careful study. Inspection of the preliminary drill logs on holes #3, #4, and #5 indicates 23 feet of scattered pyrite in DD #3, no pyrite in DD #4 and up to 1 percent in places above 125 feet in DD #5. This is not enough pyrite to cause a noticable anomaly on 250 foot dipoles, particularly with the associated low resistivities, if these holes are representative of the surrounding geology. To give a well defined, interpretable anomaly, in low resistivity ground, we need about one percent total sulfides by volume in a body within the penetration limits and the power spread geometry and distances used--in this case, having at least two of its dimensions near the dipole spacing of 250 feet. (See "Basis of I.P. Method" attached for additional details on response of different geometries.) This is probably the main reason for the lack of response on both lines. In other words, lack of response, technically is because of insufficient volume, grade and contrast, or generally, the deposition is too thin and/or discontinuous.

Line 2 is more difficult to rationalize and even at first suggested some thought of the least likely possibility of heretofore un-recognized I.P. phenomenon. Inspection of the preliminary drill log on DD #6 indicates about 100 feet of perhaps 10% sulfide at about 270 feet plus or minus to 380 feet plus or minus or within the likely penetration limits. Now if the 100 feet is the maximum dimension of the body, this could account for the lack of response, but if the body extended laterally as conceivably possible considering the associated east-west elongated intrusive nearby, we should have obtained some noticable response.

It was even considered, due to the fact that the sulfides occur imbedded in massive magnetite, that there could possibly be no resultant I.P. effect. Theoretically, both magnetite and sulfides conduct electronically, in part, and since the I.P. effect results from electro-ionic boundary effects, there might not be any I.P. effect. Also, magnetite gives relatively poor I.P. response by itself and particularly when extremely massive. Based on these factors, one might conclude that the net I.P. effect over a body of this type could be nil.

To test this interpretation, a sample of the massive magnetite-sulfide material was sent to the University of Arizona for an I.P. test. The material was found to have a percent frequency effect (PFE) of 1124%, a metallic conduction factor (MCF) of 10,000 and a resistivity (Rho/2pi) of 113 ohm-feet. This is a very strong effect, in fact, the highest to date measured in their laboratory! Therefore, the lack of inherent response interpretation is probably not valid. In our opinion, the lack of response is due to limited size. If additional drilling proves otherwise, then of course, some other factors are required for explanation. Something new and unique to the area is of course possible, but rather unlikely. Experience highly favors the most simple and straightforward answer.

The data comparison between McPhar and ours is good and the major discrepancies can be accounted for by the different spacings and frequencies used. McPhar, however, may have over-interpreted the data somewhat because they aren't consistant in what they call anomalous. For example, designating anomalies, particularly near known sulfides, from values and gradients that are only normal background variations.

We suggest that further self potential work be done to determine if S.P. is actually mapping the sulfides, as appears to be the case on our I.P. lines especially line 2, or if it was just coincidental data scatter. Where S.P. is applicable, it is a very rapid and inexpensive tool.

Another worthwhile test would be running induced polarization with an electrode in the known sulfide zone in DD #6, and radially surveying outwards and mapping the zone by concentrating the electrical energy within it. Such work would better define the strike of the mineral zones and their size. In this connection, the geology, I.P. and magnetics sufficiently correlate to suggest that the fine grained intrusive is related in some manner to the two resistivity and magnetic highs along a strike of about N 45° to 60° W. If this is the case, optimum orientation of the I.P. lines normal to the feature being mapped (N 30° to 45° E), in order to give maximum coupling and response gradient, was not provided. This could further contribute to weaker effects being obtained.

In any event, the geology seems sufficiently complex that continuing effort should remain objective. In this regard, the evidence so far, indicates better possibilities for smaller - higher grade production rather than anything very large. On the other hand, such indications are usually the most important clue, or single necessary ingredient for larger, but yet concealed possibilities. Therefore, continued competent and careful appraisal is warranted and strongly recommended, and we are certain we could substantially aid such an endeavor.

We enclose three sectional data sheets for both lines, two extra copies of this letter and three copies of the "Basis of the I.P. Method" so you will have everything in triplicate.

Faithfully,
HEINRICHS GEOEXPLORATION CO.

C.S.L.
C. S. Ludwig, Sr. Geophysicist

W. E. Heinrichs Jr.
W. E. Heinrichs
President & General Manager

CSL:jc
Enclosures: 11

HEINRICHS GEOEXPLORATION COMPANY

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

November 1, 1965

Mr. Robert L. Redmond
Martel Mining Company
1080 Pine Ridge Drive
Reno, Nevada 89502

Dear Bob:

It has taken quite a while to work this out when we could spare time from a continuing busy schedule.

Attached letter report should prove of considerable value to anyone evaluating the Paiute Reservation, and we trust you will find it so and successfully as well!

Regarding your observation on the room and board item of our 10 September statement, three men effectively six days at $15.00 per man day average equals $270.00 plus a few incidentals equals $289.64. This is about what most everyone's expenses have been running out of booming Hawthorne. We recognize this was not according to your and my verbal understanding, but we are certain that our men incurred these living expenses as verified by receipts submitted. I don't mean to infer any liability here on your part, only the related legitimacy of our statement.

Now, as to any reimbursement of our statement, we prefer to leave this entirely to your own moral and ethical scruples as to what you truly feel was the maximum inferred committment of you and your principals at any time. This includes our appreciation of your position with your associates regarding what they would reasonably honor as an incurred obligation without undue embarrassment to yourself. On the other hand, we also know your principals are not exactly destitute, poor-boy operators either. Otherwise, we consider the account closed for now pending further assistance we might provide, which we will look forward to and, which we are confident would highly benefit our mutual objectives.

Very truly yours, Walt

HEINRICHS GEOEXPLORATION CO.

Walter E. Heinrichs, Jr.
President & General Manager

WEH:jc
Enclosures: 11

6000 0133 (0760)

SPEED MESSAGE

TO W.L.Wilson

2685 Thomas Jefferson Drive.

Reno, Nevada.

FROM R.L.Redmond

SUBJECT Final Assays.

DATE April 24 1967

Dear Bill;

Enclosed is a copy of the assays for all missing intervals from CA-1. I've also enclosed a new master list copy of assays for CA-1.

SIGNED Bob

6000 0133 (0760)

Telephone 363-3302

Hand Sample Serial 15525-15542

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

W. C. WANLASS, President
L. G. HALL, Vice President
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P. O. Box 1528
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WLW

Walker-Martel Mining Co.
100 Washington St.
Reno, Nevada 89503

CA-1

RESULTS PER TON OF 2000 POUNDS

April 18, 1967

NUMBER	GOLD Ozs. per Ton (FROM)	SILVER Ozs. per Ton (TO)	LEAD Wet on Ore (THICK)	COPPER Per Cent	INSOL. Per Cent	ZINC Per Cent	SULPHUR Per Cent	IRON Per Cent	LIME Per Cent	Per Cent	Per Cent
# 361 WM	1487.7	1500.7	33.0	0.018				7.6			
362 WM	1500.7	1521.7	21.0	0.025				7.6			
363 WM	1521.7	1534.5	12.8	0.018				11.0			
364 WM	1541.5	1566.4	24.9	0.025				12.4			
365 WM	1568.0	1571.0	3.0	0.012				14.2			
366 WM	1588.0	1606.0	18.0	0.107				24.6			
367 WM	1606.0	1620.8	14.8	0.044				20.6			
368 WM	1644.8	1661.8	17.0	0.018				13.0			
369 WM	1673.1	1689.5	16.4	0.044				13.2			
370 WM	1840.2	1842.4	2.2	0.012				9.0			
371 WM	1960.2	1969.7	9.5	0.037				14.6			
372 WM	2176.5	2183.5	7.0	0.037				13.4			
373 WM	2298.5	2305.5	7.0	0.195				24.4			
374 WM	2305.5	2310.0	4.5	0.195				16.0			
375 WM	2310.0	2318.0	8.0	0.025				11.4			
376 WM	2318.0	2330.0	12.0	0.056				19.8			
377 WM	2351.0	2363.6	12.6	0.025				13.0			
378 WM	2372.5	2391.0	18.5	0.037				17.4			

Remarks

Charges $ 63.00

Glen P. Williams

CALICO PROJECT DRILL HOLE CA-1 ASSAYS

Sample No.	Footage	Interval	% Fe	% Cu
987R	1373.7-1400.0	26.3	7.0	0.037
988R	1400.0-1418.0	18.0	15.4	0.050
992R	1418.0-1467.7	49.7	13.6	0.063
361WM	1467.7-1500.7	33.0	7.6	0.018
362WM	1500.7-1521.7	21.0	7.6	0.025
363WM	1521.7-1534.5	12.8	11.0	0.018
997R	1534.5-1541.5	7.0	39.2	0.100
364WM	1541.5-1566.4	24.9	12.4	0.025
999R	1566.4-1568.0	1.6	54.5	0.189
365WM	1568.0-1571.0	3.0	14.2	0.012
998R	1571.0-1578.0	7.0	39.6	0.163
1012R	1578.0-1588.0	10.0	31.0	0.170
366WM	1588.0-1606.0	18.0	24.6	0.107
367WM	1606.0-1620.8	14.8	20.6	0.044
1004R	1620.8-1623.5	2.7	18.2	0.302
1000R	1623.5-1632.0	8.5	50.5	0.768
1001R	1632.0-1644.8	12.8	33.1	0.063
368WM	1644.8-1661.8	17.0	13.0	0.018
1002R	1661.8-1673.1	11.3	42.0	0.100
369WM	1673.1-1689.5	16.4	13.2	0.044
1003R	1689.5-1705.0	15.5	23.4	0.176
1005R	1705.0-1714.0	9.0	27.4	0.095
1006R	1714.0-1723.5	9.5	17.6	0.043
1007R	1723.5-1733.0	9.5	26.4	0.057
1008R	1733.0-1738.5	5.5	16.2	0.027
1009R	1738.5-1749.5	11.0	31.4	0.031
1010R	1749.5-1758.0	8.5	27.1	0.048
1011R	1758.0-1766.0	8.0	33.5	0.065
1015R	1766.0-1777.7	11.7	33.1	0.075
1016R	1777.7-1786.5	8.8	45.6	0.063
1017R	1786.5-1796.2	9.7	40.4	0.063
1018R	1796.2-1806.0	9.8	26.6	0.050
1019R	1806.0-1816.0	10.0	37.6	0.088
1020R	1816.0-1825.0	9.0	40.0	0.063

Sample No.	Footage	Interval	% Fe	% Cu
1013R	1825.0-1833.0	8.0	58.2	0.075
1014R	1833.0-1840.2	7.2	51.7	0.063
370WM	1840.2-1842.4	2.2	9.0	0.012
1021R	1842.4-1851.0	8.6	42.4	0.100
1022R	1851.0-1861.0	10.0	52.1	0.100
1023R	1861.0-1870.5	9.5	49.7	0.063
1024R	1870.5-1879.7	9.2	40.0	0.075
1025R	1879.7-1889.1	9.4	37.1	0.163
1026R	1889.1-1900.2	11.1	40.8	0.113
1027R	1900.2-1909.4	9.2	43.2	0.063
1028R	1909.4-1918.5	9.1	41.6	0.063
1029R	1918.5-1924.0	5.5	47.2	0.088
1030R	1924.0-1936.0	12.0	29.9	0.075
1031R	1936.0-1938.5	2.5	46.8	0.088
1032R	1938.5-1941.3	3.8	13.3	0.050
1033R	1941.3-1944.8	3.5	50.1	0.113
1034R	1944.8-1952.3	7.5	50.1	0.088
1035R	1952.3-1960.2	7.9	46.4	0.088
371WM	1960.2-1969.7	9.5	14.6	0.037
1036R	1969.7-1982.5	12.8	52.5	0.138
1037R	1982.5-1991.3	8.8	52.9	0.063
1038R	1991.3-2001.0	9.7	44.4	0.063
1039R	2001.0-2009.8	8.8	53.7	0.100
1040R	2009.8-2018.0	8.2	52.9	0.075
1041R	2018.0-2029.4	11.4	51.7	0.100
1042R	2029.4-2038.0	8.6	46.8	0.075
1043R	2038.0-2047.3	9.3	47.2	0.088
1044R	2047.3-2056.6	9.3	33.9	0.063
1045R	2056.6-2065.6	9.0	40.8	0.088
1046R	2065.6-2075.5	9.9	46.4	0.088
1047R	2075.5-2084.0	9.5	38.4	0.100
1048R	2084.0-2094.0	10.0	37.6	0.075
1049R	2094.0-2103.0	9.0	43.2	0.100
1050R	2103.0-2112.0	9.0	47.7	0.088
1101R	2112.0-2122.0	10.0	50.1	0.113
1102R	2122.0-2131.2	9.2	55.3	0.100

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Sample No.	Footage	Interval	% Fe	% Cu
1103R	2131.2-2141.0	9.8	49.7	0.138
1104R	2141.0-2150.0	9.0	49.3	0.113
1105R	2150.0-2160.0	10.0	44.4	0.138
1106R	2160.0-2170.0	10.0	54.9	0.057
1107R	2170.0-2176.5	6.5	55.7	0.088
372WM	2176.5-2183.5	7.0	13.4	0.037
1108R	2183.5-2188.2	4.7	53.7	0.057
1109R	2188.2-2191.0	2.8	11.7	0.012
1110R	2191.0-2198.0	7.0	50.1	0.088
1111R	2198.0-2208.5	10.5	41.2	0.075
1112R	2208.5-2217.0	8.5	51.7	0.088
1113R	2217.0-2226.5	9.5	52.9	0.069
1114R	2226.5-2236.5	10.0	53.3	0.113
1115R	2236.5-2245.5	9.0	50.9	0.151
1116R	2245.5-2253.0	7.5	48.1	0.163
1117R	2253.0-2263.0	10.0	54.1	0.151
1118R	2263.0-2272.0	9.0	52.5	0.088
1119R	2272.0-2281.0	9.0	48.9	0.201
1120R	2281.0-2286.0	5.0	56.5	0.100
1121R	2286.0-2298.5	12.5	22.2	0.138
373WM	2298.5-2305.5	7.0	24.4	0.195
374WM	2305.5-2310.0	4.5	16.0	0.195
375WM	2310.0-2318.0	8.0	11.4	0.025
376WM	2318.0-2330.0	12.0	19.8	0.056
1122R	2330.0-2338.5	8.5	29.5	0.063
1123R	2338.5-2351.0	12.5	33.1	0.088
377WM	2351.0-2363.6	12.6	13.0	0.025
1124R	2363.6-2372.5	8.9	34.3	0.264
378WM	2372.5-2391.0	18.5	17.4	0.037
1125R	2391.0-2401.0	10.0	21.0	0.100
1126R	2401.0-2414.0	13.0	32.7	0.100
1127R	2414.0-2425.2	11.2	61.0	0.163
1128R	2425.2-2434.6	9.4	48.9	0.151
1129R	2434.6-2448.0	13.4	24.2	0.063
1140R	2448.0-2457.5	9.5	28.3	0.088
1141R	2457.5-2466.4	8.9	27.1	0.088

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Sample No.	Footage	Interval	% Fe	% Cu
1142R	2466.4-2476.3	9.9	27.5	0.063
1143R	2476.3-2485.5	9.2	36.3	0.100
1144R	2485.5-2495.0	9.5	37.6	0.113
1145R	2495.0-2504.0	9.0	40.8	0.138
1146R	2504.0-2515.0	11.0	20.6	0.075
1147R	2515.0-2523.0	8.0	25.0	0.100
1148R	2523.0-2532.0	9.0	14.9	0.214
1149R	2532.0-2541.0	9.0	13.7	0.113
1130R	2541.0-2550.7	9.7	21.4	0.252
1131R	2550.7-2560.7	10.0	25.8	0.100
1132R	2560.7-2570.0	9.3	19.4	0.100
1133R	2570.0-2580.0	10.0	16.2	0.277
1134R	2580.0-2590.0	10.0	25.0	0.226
1135R	2590.0-2599.0	9.0	23.0	0.075
1136R	2599.0-2608.4	9.4	16.2	0.113
1137R	2608.4-2617.3	8.9	21.8	0.075
1138R	2617.3-2627.0	9.7	42.8	0.063
1139R	2627.0-2635.0	8.0	34.7	0.075
1150R	2635.0-2640.0	5.0	48.9	0.100
124WM	2640.0-2657.0	17.0	27.5	0.107
134WM	2657.0-2684.0	27.0	31.5	0.069
83WM	2684.0-2701.0	17.0	20.7	0.056
85WM	2701.0-2729.7	18.7	25.5	0.075
86WM	2729.7-2746.0	16.3	20.7	0.044
87WM	2746.0-2764.6	18.6	24.7	0.094
97WM	2764.6-2783.5	18.9	21.5	0.069
110WM	2783.5-2803.0	19.5	36.7	0.100
111WM	2803.0-2812.0	9.0	37.1	0.100
136WM	2812.0-2816.0	4.0	28.4	0.044
62WM	2816.0-2835.0	19.0	51.5	0.069
63WM	2835.0-2857.0	22.0	56.3	0.151
64WM	2857.0-2876.0	19.0	53.9	0.113
65WM	2876.0-2897.0	21.0	51.5	0.100
66WM	2897.0-2921.0	24.0	57.1	0.100
75WM	2921.0-2944.5	23.5	57.9	0.094
76WM	2944.5-2966.0	21.5	44.3	0.094

add Fe Cu

Sample No.	Footage	Interval	% Fe	% Cu
77WM	2966.0-2985.0	19.0	43.9	0.075
79WM	2985.0-3005.0	20.0	49.9	0.113
80WM	3005.0-3024.0	19.0	47.5	0.100
81WM	3024.0-3043.0	19.0	41.9	0.189
82WM	3043.0-3066.0	23.0	44.3	0.094
98WM	3066.0-3086.0	20.0	48.7	0.107
99WM	3086.0-3104.0	18.0	46.7	0.069
100WM	3104.0-3123.8	19.8	53.5	0.081
101WM	3123.8-3133.8	10.0	53.5	0.094
102WM	3133.8-3142.0	8.2	26.7	0.012
103WM	3142.0-3153.0	11.0	55.1	0.075
104WM	3153.0-3160.0	7.0	44.3	0.075
105WM	3160.0-3179.0	19.0	51.9	0.075
106WM	3179.0-3197.0	18.0	55.5	0.075
107WM	3197.0-3216.5	19.5	49.9	0.056
108WM	3216.5-3234.7	18.2	41.5	0.132
109WM	3234.7-3244.0	9.3	23.9	0.170
112WM	3244.0-3264.0	20.0	40.3	0.094
113WM	3264.0-3284.0	20.0	49.1	0.075
114WM	3284.0-3302.0	18.0	50.7	0.050
115WM	3302.0-3321.0	19.0	49.1	0.081
116WM	3321.0-3338.0	17.0	52.3	0.119
117WM	3338.0-3358.5	20.5	45.9	0.037
118WM	3358.5-3376.0	17.5	42.3	0.050
119WM	3376.0-3395.5	19.5	53.5	0.075
120WM	3395.5-3415.2	19.7	50.7	0.107
121WM	3415.2-3433.0	17.8	49.9	0.075
122WM	3433.0-3452.0	19.0	44.3	0.075
123WM	3452.0-3470.0	18.0	48.7	0.107
125WM	3470.0-3488.0	18.0	45.9	0.081
126WM	3488.0-3507.0	19.0	44.3	0.075
127WM	3507.0-3525.0	18.0	53.1	0.081
128WM	3525.0-3543.0	18.0	31.9	0.182
129WM	3543.0-3564.0	21.0	28.4	0.189
130WM	3564.0-3580.5	15.5	13.2	0.113

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Sample No.	Footage	Interval	% Fe	% Cu
131WM	3580.5-3600.0	19.5	23.1	0.157
132WM	3600.0-3617.3	17.3	20.7	0.100
133WM	3617.3-3627.3	10.0	23.1	0.170
135WM	3627.3-3633.0	5.7	18.8	0.100
			2,304.8	5.264

Hole Bottom as of 8/31/66

56 intervals

Fe Cu

$\bar{m}$ = 41% .09%

Calico CA-1

WALKER RIVER PAIUTE RESERVATION

6000 0133 (0760)

Walker Martel Mining Company

Rotary 0.0 - 1330.0'
DDH 1330 -

Vertical

0.0 - 60.0	Quartz-latite tuff; with 10% plagioclase, orthoclase, 2-3% quartz crystals, biotite, 30% glass; biotite euhedral and partly altered; plagioclase as phenocrysts, slightly argillized.
60.0 - 605.0	Same as above except finer-grained, less phenocrysts, no plagioclase phenocrysts; more argillized; partly welded at at 285-300 and 370-380'; pinkish and white.
605.0 - 620.0	No sample.
620.0 - 1248.0	Quartz-latite tuff, similar to 6-60 above; up to 40% glass; ½% hornblende; groundmass glassy; partly welded at 1050-1060'; slightly more argillized at 1030-1200'.
1248.0 - 1260.0	Fine grained quartz latite , tuffaceous(?); greenish; 3-5% biotite, euhedral, partly altered to chlorite.
1260.0 - 1308.0	Volcanic flow, dacite(?), fine grained; with considerable biotite; slight lore hornblende, up to 10%; small amount admixed granitics.
1308.0 - 1330.0	Diorite(?), silicified granitic, with up to 80% cryptocrystallined quartz, 3-8% chlorite replacing fe-mags; scattered pyrite, and small amount pyrite as grains.
1330.0 - 1373.7	NX. completely silicified granitic, probably quartz diorite; with 80-90% cryptocrystalline quartz; occasional fe-mag relict completely replaced by chlorite; 1-2% plagioclase laths, other relict plagioclase completely replaced by quartz; green chlorite along fractures; up to 2-3% pyrite with ½% pyrrhotite at 1339-1341; some calcite at 1338-1341'; brecciated at 1352-1361; considerable apple green chlorite at 1358-1364; pyrite and pyrrhotite occurs as pods, veinlets, and grains; up to 2% pyrite and pyrrhotite at 1372-1372.7.

WALKER RIVER PAIUTE RESERVATION

Walker Martel Mining Company

DDH 1330 -

Vertical

1373.7 - 1387.2	Diorite, medium grained; 30% chloritized, 20% quartz, 40% plagioclase, 15% orthoclase, 20% chloritized fe-mags; veinlets of chlorite up to ¼", calcite, pyrite, and pyrrhotite veinlets up to 1/8" wide; pyrite occurs as individual grains, euhedral crystals, and veinlets associated with calcite and chlorite; heavy dark green chlorite along fractures; 10% biotite at 1378-1379 alteted to brown chlorite; up to 10% calcite at 1382-1387; numerous veinlets pyrite and pyrrhotite at 1388 with veinlets 1/16" wide; brecciated and recemented at 1380.2-1383;
1387.2 - 1392.0	Diorite, fresh; 50% plagioclase, 30% hornblende and actinolite, 5% pyroxene, 5% pyrite, 3% pyrrhotite, 5% chlorite along fractures, trace magnetite; hornblende partially chloritized; groundmass chloritized along fractures; slightly argillized.
1392.0 - 1396.0	Same as above
1396.0 - 1409.0	Diorite, chloritized; same as above but highly chloritized; veinlets of magnetite at 1396.0 - 1397.0; considerable dark colored mica at 1398-1400; up to 65% amphiboles at 1400-1409, along with 10% quartz; highly chloritized along fractures.
1409.0 - 1421.0	Mineralized zone in diorite and skarn; up to 20% actinolite, 5-25% garnet, pyrite as pods and veinlets; 40% andradite garnet at 1412; small amounts epidote and zoisite; magnetite both massive and as euhedral crystals, some as veinlets with chloritized zones along them; amphiboles as hornblende and actinolite; pyrite as veinlets and individual grains; 1-2% pyrite, 1-2% pyrrhotite, 5-35% magnetite, trace chalcopyrite.
1421.0 - 1425.0	Fine-grained to medium-grained diorite; slightly chloritized to fresh; small amount garnet, magnetite, and chalcopyrite.
1425.0 - 1427.0	Diorite and calc-silicates; same as above with more garnet, up to 50% garnet; small amount magnetite.
1427.0 - 1441.7	Mineralized zone in diorite and calc-silicate; 20-25% garnet, 20-25% epidote, 10% zoisite, 5-10% pyrite, 10% magnetite; banding at 45° of garnet, epidote, and zoisite; some pyrrhotite; 3-20% magnetite; 1% pyrrhotite.
1441.7 - 1449.2	Same as above, but with only 5% magnetite.
1449.2 - 1486.5	Skarn; intermixed diorite, garnet, epidote, zoisite; small amount magnetite, pyrrhotite; traces chalcopyrite.
1486.5 - 1524.0	Skarn, hornfelsic; garnet. epidote, zoisite, with small amounts magnetite of 2-5% as veinlets and small pods; ½-2% pyrite; 1-2% pyrrhotite; with considerable chlorite and calcite along fractures; traces chalcopyrite.

1524.0 - 1533.5 Skarn and diorite; brecciated with 10-25% diorite; 10-25% epidote; small amounts magnetite as veinlets; 2-5% magnetite 2% pyrite, and 1% pyrrhotite.

1533.5 - 1552.7 Same composition as above, but very fine grained; considerable hornblende; highly chloritized; 3-40% magnetite; chalcopyrite.

1552.7 - 1578.0 Hornfelsic skarn and metadiorite; same as above but with some admixed diorite; magnetite and pyrite ad veinlets and individual grains; 25-30% actinolite, partially chloritized, 25% garnet, 15-70% epidote; considerable dark green chlorite on fractures; 2-5% pyrite, ½-10% pyrrhotite; traces chalcopyrite at 1577;

1578.0 - 1588.0 Mineralized zone in skarn; with 20-30% magnetite; 2% pyrite; 3-15% pyrrhotite; part of magnetite euhedral; magnetite and pyrite localized in veinlets; up to 70% actionolite at 1581; up to 40% pyrrhotite in spots; euhedral green actinolite; heavy dark green chlorite along fractures; 1" actinolite crystals at 1588.

1588.0 - 1596.5 Skarn zone with fine grained garnet and actinolite crystals up to 1½" in segregated spots; small amounts magnetite; pyrite and pyrrhotite as small pods and grains; small amounts calcite associated with magnetite, pyrite, and pyrrhotite; 2% pyrite, 3% pyrrhotite, 1-15% magnetite.

1596.5 - 1632.5 Skarn, hornfelsic; with some admixed diorite at 1623; pods of pyrite, pyrrhotite, and magnetite, small amounts calcite; groundmass of epidote, garnet, and actinolite; veinlets dips 45°; at 1601' 25% garnet, 55% actinolite, 10% calcite, 5% epidote; 1-20% pyrite, 1-20% pyrrhotite, 5-45% magnetite; Trace to 3% chalcopyrite at 1619-1632.

1632.5 - 1650.5 Skarn, mineralized; 40-50% garnet, 5-15% epidote, 35-45% actinolite; 2% pyrite, 1-3% pyrrhotite, 10-25% magnetite; traces chalcopyrite as coatings on pyrite and pyrrhotite.

1650.5 - 1662.5 Skarn; 10-45% epidote, 15-30% garnet, 15-40% actinolite; 5% magnetite, 2% pyrite, 1% pyrrhotite.

1662.5 - 1669.0 Same as above but with 20-30% magnetite and 3-10% pyrrhotie; trace chalcopyrite.

1669.0 - 1687.0 Skarn, hornfelsic; same minerals as above; heavy dark green chlorite on fractures; 2-3% pyrite, 2-5% pyrrhotite, trace chalcopyrite, 10-25% magnetite.

1687.0 - 1689.3 Skarn, small amount magnetite up to 20%, 5% pyrite, and 10 % pyrrhotite.

1689.3 - 1717.0 Mineralized skarn; same as above, up to 75% actinolite; 2-5% pyrite, 5-25% pyrrhotite; 5-30% magnetite, trace chalcopyrite.

1717.0 - 1734.0	Hornfelsic skarn, mineralized; chalcopyrite occurs as small pods, veinlets, and coatings on pyrite and pyrrhotite; 2-3% pyrite, 5-15% pyrrhotite; 5-30% mahnetite.
1734.0 - 1840.4	Skarn, mineralized; up to 45% epidote, 35% garnet, 25% actinolite, 75% actinolite at 1766-1777; considerable dark green chlorite along fractures; 2-5% pyrite, 3-20% pyrrhotite, averaging 10%, 10-55% magnetite, averaging 30-55%; Traces chalcopyrite up to ½%;
1840.4 - 1842.4	Skarn; 35% epidote, 50% actinolite, 10% garnet, .3% pyrite, 5% magnetite.
1842.4 - 1889.1	Mineralized skarn; with 15-55% magnetite, 2% pyrite, 2-5% pyrrhotite; sheared and brecciated at 1879.7-1881.0 and and 1883.0 1883.8, calcite and small amounts clay at 1884-1886.
1889.1 - 1891.5	Skarn, hornfelsic
1891.5 - 1924.0	Mineralized skarn with 1-3% pyrite, 15-55% magnetite and 2-10% pyrrhotite,trace chalcopyrite.
1924.0 - 1927.0	Skarn, with some high-angle banding of garnet, actinolite, and epidote, 5-10% magnetite, partially euhedral, 1% pyrite, and 5% pyrrhotite, traces chalcopyrite.
1927.0 - 1961.8	Mineralized skarn, with 1% pyrite, 2-10% pyrrhotite, 15-55% magnetite, averaging 30-50%; traces chalcopyrite; banding at 45°; dark green chlorite on fractures.
1961.8 - 1969.5	Hornfelsic skarn with fine grained garnet, epidote, and actinolite, 10-20% magnetite, 2% pyrite, 3-5% pyrrhotite, traces chalcopyrite.
1969.5 - 2047.3	Mineralized skarn with 10-40 actinolite, 3-5% garnet, 15-45% epidote; with 2% pyrite, 2-55% magnetite, averaging 35-50%, 3-15% pyrrhotite, averaging 10%; traces chalcopyrite.
2047.3 - 2048.5	Skarn, banding at 45°.
2048.5 - 2177.6	Mineralized skarn; some vertical banding; veinlets of calcite at 20°-25°; pyrite, pyrrhotite, and calcite in small veinlets at 2170-2177; euhedral crystals magnetite at 2160-2177. with 2% pyrite, and 3-20% pyrrhotite, averaging 10%, and 10-55% magnetite, averaging 25-40%; traces chalcopyrite; 1% chalcopyrite at 2172 and 2139, with ½% at 2131; 25% garnet at 2101;
2177.6 - 2184.0	Hornfelsic skarn with 25-70% actinolite, 15-45% epidote, 10-20% garnet; 1-2% pyrite, 3-5% pyrrhotite, 3% magnetite, traces chalcopyrite as veinlets; dark green chlorite on fractures.
21.84.0 - 2188.6	Mineralized skarn with 45-50% magnetite, 1% pyrite, 10-15% pyrrhotute.
21886 - 2191.0	Skarn, granoblastic, 60% actinolite, 20% epidote, 10% garnet; 1% pyrite, 2-3% pyrrhotite, 3-5% magnetite.

2191.0 - 2198.0	Mineralized skarn; same as above but with 10-45% magnetite, 10-20% pyrrhotite, 1% pyrite;
2198.0 - 2201.4	Skarn with 65% actinolite, 25% epidote, 10-20% garnet; 10-15% magnetite and 2-5% pyrrhotite.
2201.4 - 2286.0	Mineralized skarn; same as above, banding of 55° at 2217, and 25° at 2245; up to 1% chalcopyrite at 2222-2226; chalcopyrite usually along fractures; dark green chlorite and pale pyrite along fractures; 25-55% magnetite, 5-15% pyrrhotite, 2-5% pyrite, and trace to 2% chalcopyrite.
2286.0 - 2310.0	Skarn with 10-25% garnet, 30-65% actinolite, 15-30% epidote; calcite veinlets, dark green chlorite, and pale pyrite on fractures. 3-10% magnetite, 2% pyrite, 10-30% pyrrhotite, and trace chalcopyrite.

2310.0 - 2330.0	Skarn, hornfelsic; 30-55% garnet (grossularite and andradite), 10-20% epidote, 10-50% actinolite, small amounts vesuvianite and zoisite; up to 40% epidote at 2319-2328'; banding at 70° at 2322'; pyrite and pyrrhotite as disseminated grains and veinlets; 3-15% magnetite, 2% pyrite, 3-5% pyrrhotite, and traces chalcopyrite, calcite veinlets.
2330.0 - 2354.2	Mineralized skarn; 5-35% magnetite, 1-10% pyrrhotite, 1-2% pyrite, trace chalcopyrite; part of magnetite as euhedral crystals, minute veinlets of calcite and epidote; pyrrhotite as veinlets and disseminated in groundmass; dark green chlorite on fractures.
2354.2 - 2364.0	Skarn; with 20-75% actinolite, 10-30% epidote, 10-20% garnet; with chalcopyrite as coatings on pyrrhotite grains; pyrrhotite as pods and veinlets; 3" veinlet calcite and and pyrrhotite at 2362', dipping 65°; banding at 80°; 5% magnetite, 1% pyrite, 3-10% pyrrhotite, traces chalcopyrite.
2364.0 - 2372.0	Mineralized skarn; same as above, but highly chloritized; 10-20% magnetite as pods, 5-75% pyrrhotite, 1% pyrite.
2372.0 - 2373.0	Chloritized skarn with 20% magnetite and 20% pyrrhotite.
2373.0 - 2414.0	Skarn; same as above, except 25% garnet at 2402-2410; actinolite and epidote in groundmass; Considerable calcite, up to 30% as veinlets and pods; brecciated and recemented by calcite at 2373-2375'; pods and veinlets of magnetite and pyrrhotite; 5-25% magnetite, 1-3% pyrite, 5-15% pyrrhotite, traces chalcopyrite; dark green chlorite on fractures.
2414.0 - 2435.0	Mineralized skarn; Same with 5-50% magnetite, 5-20% pyhotite, 2% pyrite and traces chalcopyrite.
2435.0 - 2505.0	Skarn, hornfelsic; 40-75% actinolite, 20-30% epidote, 5-10% garnet, 1-5% quartz, 5% chlorite, small amounts zoisite and vesuvianite; up to 35% garnet at 2676.4 - 2478', 55% at 2478-2479', 20-40% at 2479-2494'; up to5% quartz at 2456-2462'; some vesuvianite at 2461-2466; considerable calcite on fractures; 5-30% magnetite at 2435-2494', 35-50% magnetite at 2494-2505', 1-5% pyrite, 3-20% pyrrhotite at 2435-2545', 3-5% pyrrhotite at 2345-2505', traces chalcopyrite.
2505.0 - 2516.0	Metadiorite(?) or hornblende granulite; 20-30% hornblende, 10-20% actinolite, small amounts plagioclase and garnet; 10-25% magnetite as pods and veinlets, 1% pyrite, 3% pyrrhotite, traces chalcopyrite.
2516.0 - 2537.0	Skarn, hornfelsic; with garnet, actinolite, and epidote; small amounts plagioclase; 5-35% magnetite, 5% pyrrhotite, 1% pyrite, and traces chalcopyrite; dark green chlorite on fractures.
2537.0 - 2541.6	Mineralized skarn; with 5-30% pyrrhotite, 10-25% magnetite, 3% pyrite, except 30% at 2341'.

2541.6 - 2550.0 Diorite(?), plagioclase phenocrysts in fine-grained groundmass; up to 25% fe-mags, highly chloritized; magnetite at 2541.6 appears to have been leached by later solutions with deposition of pyrite along magnetite; calcite in fractures with small amount marcasite; pyrite as pods, veinlets and disseminated grains; ½-½" drak green chlorite veinlets on fractures; 2% chalcopyrite at 2548.5-2548.7'; 10% magnetite, 3% pyrite, 1% pyrrhotite, and traces chalcopyrite.

2550.0 - 2564.0 Mineralized skarn; actinolite, garnet, and epidote; numerous veinlets calcite; dark green chlorite on fractures.

2564.0 - 2599.0 Hornblende-actinolite skarn; 10-40% hornblende, 20-60% actinolite, varying amounts garnet, epidote, wollastonite; at 2590-2599 10-35% hornblende, 20-60% actinolite. 10-20% garnet; numerous calcite veinlets; quartz veinlets with pyrite at 2579'; 3-10% pyrite at 2586-2591', balance 1-3% pyrite; 2-5% magnetite, trace to 3% pyrrhotite at 2564-2586' and 3-20% at 2586-2599'; 3% quartz at 2589 and 2% at 2597'; traces chalcopyrite.

2599.0 - 2616.0 Skarn, hornfelsic; 40-75% actinolite, 10-20% epidote, up to 5% garnet, up to 5% hornblende in places; up to 5% phlogopite and 80% actinolite at 2612-2616'; black coating on pyrrhotite; small amounts zoisite; pyrrhotite disseminated along fractures and as pods; 1-10% pyrrhotite, trace to 1% pyrite, 5% magnetite, and traces to ½% chalcopyrite.

2616.0 - 2640.0 Mineralized skarn; same as above but with 5-35% magnetite, except 50% at 2836', 1-5% pyrite, 3-40% pyrrhotite averaging 10-35%; traces to ½% chalcopyrite. With garnet, actinolite, and epidote. At 2635-2640' 5-10% garnet, 10-30% epidote, 20-50% actinolite, 5% zoisite, up to 5% quartz, andwith considerable dark green chlorite on fractures. Chalcopyrite along fractures and along grain boundaries. Small amount vesuvianite.

Bottom: 2640 2/14/66

SPEED LETTER®

TO: Mr. T. A. Netelbeek FROM: W. L. Wilson

SUBJECT: Drill logs and Assays, Calico Prospect

MESSAGE

DATE: August 23, 1966 19

Tom: attached are the drill logs and assays for those portions of drill holes CA-1 and CA-3 on the Calico Prospect which Bob Redmond instructed me to deliver to you.

best regards,

SIGNED Bill

6000 0133 (0760)

SPEED MESSAGE

TO: R. L. Redmond FROM: W. L. Wilson

SUBJECT: Data for Bear Creek Mining Co.

DATE August 18, 1966 19

Bob: Attached are two copies of each of the following

1. portion of verbal (written) log of Drill Hole CA-1 from 1330 to 1578.0'.

2. Assay data from 1373.7 to 1588.0 for hole CA-1.

3. Assay data from 2048 to 2614' for hole CA-3.

This represents the portions of the holes that Bear Creek Mining Co. was able to log with down-the-hole IP gear, and which should be transmitted to them per your memo to me of 7-6-66.

Ton Nett[illegible]ek of Bear Creek called on 8-16-66, when you were out, to remind us that he had not received this data yet, and he is anxious to get same.

The written log for that portion of hole CA-3 should be furnished to them as soon as it is available.

SIGNED WLW

Calico CA-1
CALICO CA-1
6000 0133 (0760)

WALKER RIVER PAIUTE RESERVATION

Walker Martel Mining Company

Rotary 0.0 - 1330.0'
DDH 1330 -

Vertical

1330.0 - 1373.7 NX. completely silicified granitic, probably quartz diorite; with 80-90% cryptocrystalline quartz; occasional fe-mag relict completely replaced by chlorite; 1-2% plagioclase laths, other relict plagioclase completely replaced by quartz; green chlorite along fractures; up to 2-3% pyrite with ½% pyrrhotite at 1339-1341; some calcite at 1338-1341'; brecciated at 1352-1361; considerable apple green chlorite at 1358-1364; pyrite and pyrrhotite occurs as pods, veinlets, and grains; up to 2% pyrite and pyrrhotite at 1372-1372.7.

WALKER RIVER PAIUTE RESERVATION

Walker Martel Mining Company

DDH 1330 -

Vertical

1373.7 - 1387.2	Diorite, medium grained; 30% chloritized, 20% quartz, 40% plagioclase, 15% orthoclase, 20% chloritized fe-mags; veinlets of chlorite up to ¼", calcite, pyrite, and pyrrhotite veinlets up to 1/8" wide; pyrite occurs as individual grains, euhedral crystals, and veinlets associated with calcite and chlorite; heavy dark green chlorite along fractures; 10% biotite at 1378-1379 alteted to brown chlorite; up to 10% calcite at 1382-1387; numerous veinlets pyrite and pyrrhotite at 1388 with veinlets 1/16" wide; brecciated and recemented at 1380.2-1383;
1387.2 - 1392.0	Diorite, fresh; 50% plagioclase, 30% hornblende and actinolite, 5% pyroxene, 5% pyrite, 3% pyrrhotite, 5% chlorite along fractures, trace magnetite; hornblende partially chloritized; groundmass chloritized along fractures; slightly argillized.
1392.0 - 1396.0	Same as above
1396.0 - 1409.0	Diorite, chloritized; same as above but highly chloritized; veinlets of magnetite at 1396.0 - 1397.0; considerable dark colored mica at 1398-1400; up to 65% amphiboles at 1400-1409, along with 10% quartz; highly chloritized along fractures.
1409.0 - 1421.0	Mineralized zone in diorite and skarn; up to 20% actinolite, 5-25% garnet, pyrite as pods and veinlets; 40% andradite garnet at 1412; small amounts epidote and zoisite; magnetite both massive and as euhedral crystals, some as veinlets with chloritized zones along them; amphiboles as hornblende and actinolite; pyrite as veinlets and individual grains; 1-2% pyrite, 1-2% pyrrhotite, 5-35% magnetite, trace chalcopyrite.
1421.0 - 1425.0	Fine-grained to medium-grained diorite; slightly chloritized to fresh; small amount garnet, magnetite, and chalcopyrite.
1425.0 - 1427.0	Diorite and calc-silicates; same as above with more garnet, up to 50% garnet; small amount magnetite.
1427.0 - 1441.7	Mineralized zone in diorite and calc-silicate; 20-25% garnet, 20-25% epidote, 10% zoisite, 5-10% pyrite, 10% magnetite; banding at 45° of garnet, epidote, and zoisite; some pyrrhotite; 3-20% magnetite; 1% pyrrhotite.
1441.7 - 1449.2	Same as above, but with only 5% magnetite.
1449.2 - 1486.5	Skarn; intermixed diorite, garnet, epidote, zoisite; small amount magnetite, pyrrhotite; traces chalcopyrite.
1486.5 - 1524.0	Skarn, hornfelsic; garnet. epidote, zoisite, with small amounts magnetite of 2-5% as veinlets and small pods; ½-2% pyrite; 1-2% pyrrhotite; with considerable chlorite and calcite along fractures; traces chalcopyrite.

1524.0 - 1533.5 Skarn and diorite; brecciated with 10-25% diorite; 10-25% epidote; small amounts magnetite as veinlets; 2-5% magnetite 2% pyrite, and 1% pyrrhotite.

1533.5 - 1552.7 Same composition as above, but very fine grained; considerable hornblende; highly chloritized; 3-40% magnetite; chalcopyrite.

1552.7 - 1578.0 Hornfelsic skarn and metadiorite; same as above but with some admixed diorite; magnetite and pyrite ad veinlets and individual grains; 25-30% actinolite, partially chloritized, 25% garnet, 15-70% epidote; considerable dark green chlorite on fractures; 2-5% pyrite, ½-10% pyrrhotite; traces chalcopyrite at 1577;

6000 0133 (0760)

The following intervals in the portion of CA-1 which was logged with down-the-hole IP gear by Bear Creek Mining Co. were assayed, with the results as listed below:

Sample No.	Footage	Interval	% Fe	% Cu
987R	1373.7-1400.0	26.3'	7.0	0.037
[illegible]	1400.0-1418.0	18.0'	15.4	0.050
992R	1418.0-1467.7	49.7'	13.6	0.063
no assays	1467.7-1534.5	66.8'		
[illegible]	1534.5-1541.5	7.0'	39.2	0.100
no assays	1541.5-1566.4	24.9'		
[illegible]	1566.4-1568.0	1.6'	54.5	0.189
no assays	1568.0-1571.0	3.0'		
998R	1571.0-1578.0	7.0'	39.6	0.163
1012R	1578.0-1588.0	10.0'	31.0	0.170

6000 0133 (0760)

CA 3 ASSAY

6L CONTACT

			Cu	Ft %	Fe	Ft %
2048	2065	17	.035	.700	48.7	827.9
2065	2078	13	.019	.247	47.1	612.3
2078	2090	12	.014	.168	49.0	588.0
2090	2103	13	.025	.325	49.9	648.7
2103	2124	21	.044	.924	44.6	936.6
2124	2141	17	.060	1.020	53.9	916.3
[illegible]	[illegible]	14	.013	.182	34.0	476.0
2155	2181	26	.007	.018	27.7	720.2
2181	2208	27	.034	.918	32.7	882.9
2208	2232	24	.056	1.344	41.8	1003.2
2232	2253	21	.017	.357	47.0	987.0
2253	2273	20	.012	.240	33.0	660.0
2273	2305	32	.012	.384	21.3	681.6
2305	2333	28	.012	.336	24.5	686.0
2333	2358	25	.050	.125	43.0	1075.0
2358	2382	24	.069	1.656	47.0	1128.0
2382	2408	26	.040	1.040	42.2	1097.2
2408	2430	22	.075	1.650	38.2	840.4
2430	2455	25	.126	3.150	34.6	865.0
2455	2478	22	.075	1.650	25.3	556.6
2478	2502	24	.119	2.856	54.7	1312.8
2502	2524	22	.088	1.936	44.2	972.4
2524	2553	29	.075	2.175	51.0	1479.0
2553	2567	14	.100	1.400	48.6	680.4
2567	2590	23	.044	1.012	9.8	225.4
2590	2614	24	.056	1.344	41.0	984.0

uniform low (2048–2358)

gradual increase (2358–2614)

7.288 – 310'

Calico CA-2
6000 0133 (0760)

WALKER RIVER PAIUTE RESERVATION

Walker Martel Mining Company

Rotary: 0.0 - 1102.0
DDH, NX: 1102.0 - 2075.0
BX: 2075.0 - 2306.0

Vertical

0.0 - 20.0	Alluvium
20.0 - 175.0	Andesite, gray in color; 5-15% hornblende, 5-20% plagioclase, 2-5% biotite as phenocrysts; groundmass aphanitic, partially argillized; small amount brown iron oxide.
175.0 - 340.0	Crystal tuff, well indurated, laveneder color.
340.0 - 440.0	Crystal tuff, pinkish color; 10-35% crystals, 5-15% glass shards.
440.0 - 455.0	No sample
455.0 - 690.0	Crystal tuff, fine-grained, pinkish to red in color.
690.0 - 1102.0	Crystal tuff, fine- to coarse-grained, whitish in color; 5-15% quartz, 10-25% glass shards; 2-5% hornblende and biotite in aphanitic groundmass.
1102.0 - 1147.0	Quartz-latite crystal tuff, pinkish in color; 10-20% crystals; 5-8% biotite, 5-15% glass shards, 3-5% orthoclase, occasional plagioclase lath; partially argillized.
1147.0 - 1153.8	Lapilli crystal tuff, pinkish in color; 10-20% crystals of plagioclase, orthoclase, biotite, quartz, and glass shards; moderately to highly indurated; 5-20% fragments up to 3/4".
1153.8 - 1228.0	Lapilli crystal tuff - same as above but white; finer grained at 1170.0 - 1173.0; clay and apple-green chlorite along fractures at 1183-1186, 1219-1221, and 1224-1226; slightly to moderately argillized in places.
1228.0 - 1340.6	Crystal tuff, partially lapilli; varying in composition from 10-20% crystals of plagioclase, orthoclase, euhedral to sub-hedral biotite, and quartz, with considerable glass shards; moderately to highly indurated; slightly argillized; biotite usually altered to chlorite; thin seams of chlorite on fractures; at 1239.2- 1243.5 sheared with considerable chlorite in fractures, partially assimilated by dike(?) material; at 1250-1253 highly brecciated and argillized, considerable red iron oxide and small amount manganese oxide along fractures; highly sheared at 1292-1296; apple-green chlorite along fractures at 1253-1256 and 1230-1233; a few hornblende crystals at 1230-1233.
1340.6 - 1383.0	Contact zone crystal tuff and andesite; quite hard, well indurated; with considerable hornblende phenocrysts up to 1/8" long; fine-grained, with 5-10% crystals and 3-5% fragments; highly sheared and argillized at 1371.5-1377.6.

1383.0 - 1383.4	Contact tuff - andesite
1383.4 - 1391.0	Andesite, highly argillized. with phenocrysts of hornblende and biotite, both chloritized; fragments of tuff.
1391.0 - 1393.0	Low-angled slickensides, considerable breccia.
1393.0 - 1400.4	Quartz-diorite(?), dark grey to blackish; andesite possibly cutting diorite at 1393.0; small amount garnet.
1400.4 - 1403.0	Fine-grained intrusive, dioritic; highly chloritized; brecciated with veinlets of calcite; small amount pyrite disseminated through groundmass.
1403.0 - 1405.0	Hornfels(?); very fine-grained; probably metamorphosed carbonaceous, arenaceous, limestone; dark green chlorite on fractures.
1405.0 - 1408.0	Hornfels and diorite intermixed, with veinlets of calcite.
1408.0 - 1410.5	Same as above; some banding in hornfels at 85-88°.
1410.5 - 1435.0	Fine-grained intrusive, dioritic in composition; highly silicified; highly brecciated, with fragments completely silicified; small amount hornfels at 1416.0; small amount hornblende and actinolite; traces copper carbonates on fractures; considerable red iron oxide.
1435.0 - 1445.5	Same as above, but less silicified; chlorite on fractures.
1445.5 - 1501.0	Diorite(?), fine-grained, silicified; 30-60% silicification; greenish to gray in color; brecciated zones at 1465.0-1465.8, 1473.6-1474.2, 1474.4-1475.4, and 1500.0-1501.0; 10-40% chloritization, 5-10% calcite, Trace pyrite disseminated through groundmass; a few scattered grains magnetite;
1501.0 - 1519.0	Hornfels and diorite(?) intermixed; dark gray in color; dark green chlorite on fractures with associated pyrite as veinlets; 40-60% chloritized.
1519.0 - 1536.0	Diorite(?), fine-grained, slightly to moderately chloritized; with calcite veinlets; 60-75% silicified, 10-20% chloritized.
1536.0 - 1552.3	Calc-silicates and diorite intermixed; 25-35% chloritized; 3% calcite; highly fractured.
1552.3 - 1627.0	Hornfels; dark gray to greenish; 15-20% chloritized, 10-15% calcite, slightly argillized; ½-2% pyrite; highly fractured, with considerable chlorite along fractures.
1627.0 - 1633.0	Calc-silicates; 5-10% biotite; brecciated and recemented by calcite; 2% pyrite.
1633.0 - 1801.4	Hornfels; gray to dark gray in color; banded at 80-85°; highly fractured, usually recemented by calcite; 10-20% chloritized, 5-25% calcite; ½-1% pyrite.

1801.4 - 1810.0	Same as above; small amount garnet at 1800'; poorly banded at 75° at 1806-1810.
1810.0 - 1819.0	Calc-silicates; granulitic, greenish in color; dark green chlorite on fractures; brecciated at 1816-1818.
1819.0 - 1880.0	Hornfels; dark green chlorite along fractures; brecciated and partially recemented by calcite; banded at 65° at 1819-1837, at 55° at 1837-1862, and 60-70° at 1862-1880; small amounts pyrite; averages 10% calcite; 20-30% chloritized; 1-2% pyrite.
1880.0 - 1882.0	Calc-silicates; up to 20% garnet, 50% garnet (andradite) at 1880'; 5-10% pyrite, 15-20% epidote, 10-35% calcite;
1882.0 - 1899.5	Hornfels; greenish; 10-20% chloritized, 15% carbonate; at 1882-1889 highly brecciated and recemented by calcite and quartz veinlets; banded 75°; heavy dark green chlorite on fractures.
1899.5 - 1901.5	Calc-silicates; 40% garnet (andradite); 10% epidote, 5-10% amphiboles, 10% calcite, 5% pyrite; brecciated and recemented by calcite.
1901.5 - 2075.0	Hornfels; gray to gray black in color; dark green chlorite on fractures; 10-20% chloritized, 10-20% calcite with 15-25% calcite at 2042-2044, 5% argillization; trace to 1% pyrite; banded at 60-65°; at 1951 appears to have been a calcareous carbonaceous, clayey sediments; highly brecciated at 1951-1956; ½" calcite veinlets at 2006'.
2075.0 - 2124.0 BX	Hornfels; same as above; gray in color; at 2075-2084 banded at 70°, at 2104-2104 banded at 50°, at 2104-2124 banded at 60°; dark geen chlorite on fractures; 20-25% chloritized, 40% calcite at 2086' and 20% at 2087-2124'; 5% argillized; 3" calcite veinlet at 2084'; highly brecciated and recemented by calcite at 2116-2124.
2124.0 - 2157.0	Hornfels, black, carbonaceous; highly brecciated; small amount wollastonite at 2139'; pyrite as disseminated grains and as veinlets;
2157.0 - 2234.5	Hornfels; gray in color; banded at 60-70° at 2157-2225 and 50° at 2225-2234; trace garnet at 2168; small, amounts epidote, zoisite, grossularite at 2177-2191; 20% chloritized, 15-35% calcite, 5% argillized; trace to 1% pyrite.
2234.5 - 2306.0	Hornfels, light to dark gray in color; slightly harder, sub-concoidal fractures at 2242-2261; banded at 50°; brecciated at 2266-2273'; small amount actinolite at 2296'; associated with calcite and pyrite, 20% chloritized, 10-15% calcite with 35% at 2280', 5% argillized, trace to 1% pyrite with 2% pyrite at 2245 and 2272'.

Bottom: 2306 feet, 5-3-66.

Calico CA-3
6000 0133 (0760)

WALKER RIVER PAIUTE RESERVATION

Walker Martel Mining Company

Bottom: 3421.9 feet

Rotary: 0.0 - 1630.0'
NX: 1630.0 - 2155.0'
BX: 2155.0 - 3421.9'

0.0 -	75.0	Alluvium
75.0 -	150.0	Welded tuff, 5-15% glass shards, 3-5% biotite, 1% quartz crystals, sanidine, 3-5% hornblende; slightly argillized and chloritized.
150.0 -	300.0	Andesite(?), gray in color, 5-10% hornblende up to 3mm in length, 20-25% plagioclase(?) laths that have been argillized and chloritized, a few scattered quartz crystals; some iron oxides at 230-265'; samples highly contaminated by tuffaceous material from above.
300.0 -	380.0	Crystal tuff, reddish in color, partially welded; 10-25% crystals of plagioclase, quartz, sanisine, hornblende, and biotite; contaminared by andesite.
380.0 -	575.0	Andesite, same as 150-300'; tongue of crystal tuff at 560-565'; small amount pyrite at 545-550'; contaminated by crystal tuff.
575.0 -	1570.0'	Crystal tuff, tan to whitish in color, lavender at 1400-1500; 5-15% plagioclase laths, 2-5% quartz and sanisine, 1-3% biotite, 5-15% hornblende, glasy and pumiceous groundmass, partly devitrified; at 1300-1400' sporadic grains of limoite pseudomorphic after pyrite; slightly magnetic; contamina ted by andesite.
1570.0 -	1625.0	Tuff, slightly welded, possibly the bootom of a cooling unit, with some glassy shards; at 1590-1600' black glassy fragments; 15-20% glassy shards, 3-5% biotite; greenish to lavender in color.
1625.0 -	1630.0	No sample.
	1630.0	Bottom of rotary, NX 1630.0 - 2155.0.
1630.0 -	1690.0	Crystal tuff, greenish, well indurated; flattened pumice fragments up to 2"; a few scattered fragments basalt; plagioclase laths, , 2-3 % biotite, 3-5% quartz, 5-10% sanidine; numerous alien fragments up to 2"; considerable chlorite along fractures; groundmass slightly to moderately chloritized; small amount epidote at 1652-1654'; some alunite at 1661'; eutaxitic structure at 30°; brecciated at 1647-1652, 1669-1673', and 1680-1685'.

1690.0 - 1709.0	Lapilli crystal tuff, eutaxitic structure; zeolites in cavities; moderately chloritized and argillized; possibly top of cooling unit; devitrified.
1709.0 - 1735.0	Devitrified lapilli crystal tuff; same as above but showing more devitrification.
1735.0 - 1761.5	Flow(?), possibly a flow between ash falls or a part of the cooling unit; 3-10% plagioclase laths, 2-5% biotite; 1-2% chloritized hornblende, some zeolites at 1743-1765'; up to 20% fragments at 1746-1749'; 5-10% glass shards at 1743-1761'; small amount carbonates, up to 30% chloritized and slightly argillized.
1761.5 - 1798.0	Crystal tuff, considerable glass shards; brecciated at 1774-1779'; highly indurated at 1788-1798'.
1798.9 - 1814.0	Same as above but fragments well flattened; considerable pyrite at 1804.5 - 1805.6', and with pyrite smeared along fractures at 1807-1814'; considerable chlorite along fractures; brecciated at 1807-1814'; small amount clay and carbonate at 1708-1814' with up to 30% chlorite.
1814.0 - 1885.0	Lapilli crystal tuff, eutaxitic structure; 10-20% fragments at 1814-1822' and decresing amounts downwards, partially devitrified, increasing amounts zeolites downwards; fair amount pyrite at 1830-1831'; some white opaline material at intervals; traces pyrite at 1846-1848', 1854-1858', and 1870-1885'; 3/4" calcite veinlet at 1835' with a small amount pyrite; 3-10% plagioclase laths; moderately chloritized at 1840-1885'; brecciated at 1870-1874' and 1874-1885'; 30-60% chloritized.
1885.0 - 1912.0	Glassy, partially obsidian, bottom unit of cooling unit; only partially devitrified, numerous fractures, with fair amounts zeolites on fractures and in vugs; slickensides at 65°; highly brecciated at 1890-1895' and 1905-1906';
1912.0 - 1822.0	Partially same as above, but with more zeolites; up to 10% zeolites; 5% biotite, veinlets of calcite; banding at 45-50°; brecciated at 1916-1921'; dark green in color; up to 75% chlorite.
1922.0 - 1938.0	Flow breccia, ash-flow with numerous fragments of diorite, chert(?), silicified diorite, tuff, and quartz monzonite; averaging ½-2" across, but with some boulders quartz monzonite to 18" across; gouge at 1929-1930';
1938.0 - 2048.0	Andesite breccia; probably intrusive into quartz diorite and tuff; up to 40% fragments of above rocks at 1948'; 20-40% fragments at 2037-2046' and 20-30% at 2046-2048'; at 1958-1967' 2-5% biotite, and 3-5% plagioclase; brecciated at 1958-1962'; considerable gouge at 1949.0 - 1951.5'; small amount rhyolite at 2009-2012' and 2028'; slickensides at 35° at 2048' at contact; some magnetite at 2045-2047.8'.

2048.0 - 2147.0 Mineralized zone in hornfels; 5-25% actinolite at 2048-2067'; 1-15% actinolite at 2067-2147'; 2-5% epidote; 5-20% calcite; part of calcite with pyrite ad veinlets appearing to be later than magnetite; coarser grained pyrite forming as rims around colloidal pyrite; considerable garnet at 2114-2118'; 3-10% pyrite and pyrrhotite; 25-60% iron as magnetite, occuring ad veinlets, pods, and disseminated in groundmass; traces chalcopyrite at 2099, 2101', and 2119'; 5-20% carbonate; 10-25% chloritized.

2147.0 - 2190.4 Mineralized zone in quartz diorite; 3-5% garnet (andradite), 25-50% light green actinolite, 15-30% magnetite disseminated and as euhedral crystals, 3-5% epidote; 3-5% zoisite at 2181-2190'; 3-5% pyrite, except 50% pyrite at 2172'; 10-20% calcite at 2156', with magnetite on calcite; slightly silicified at 2180-2181'; 15-30% magnetite; 5-10% carbonate, and 10-15% chloritized at 2147-2190'; at 2190' banding at 65°.

2190.4 - 2214.0 Mineralized hornfels, contact at 65°; 5-30% garnet, 10-40% actinolite, 2-20% epidote, 1-2% zoisite, 10-40% magnetite as veinlets and pods, 3-5% pyrite, trace-½% pyrrhotite, banding at 35°, slightly chloritized and some carbonate.

2214.0 - 2308.0 Mineralized quartz diorite, 15-3 plagioclase, 5-20% quartz, 20-35% actinolite; in pla es with hornfels containing 2-5% garnet, 10-50% actinolite, 5-35% epidote, 1-15% zoisite, 10% calcite disseminated and as veinlets, 3-10% pyrite with 20% pyrite at 2245-2250' and 30% at 2268'; 30-50% magnetite at 2218-2266', 20% at 2214-2218, 3-25% at 2266-2308'; 1-3% pyrrhotite; traces chalcopyrite at 2214, 2229-2234', 2269, 2278', 2283-2286'; 2-5% quartz veinlets and pods at 2295-2297'; up to 10% chloritized; calcite filling open spaces around euhedral magnetite crystals at 2261'; magnetite disseminated and as pods and veinlets; rock darker in color and with 60-75% fe-mags and 5-20% plagioclase and quartz at 2281-2291'; brecciated at 2234-2243', probably pre-mineralization.

2308.0 - 2312.0 Quartz di rite, medium grained; 20-45% plagioclase, 10-15% quartz, 20-40% actinolite, 2-3% garnet, 3% magnetite, 3% pyrite, ½% pyrrhotite, up to 10% calcite as veinlets and open space filling, slightly chloritized argillized.

2312.0 - 2567.0 Mineralized quartz diorite; same as above but slightly chloritized (10%) and with up to 5% carbonate; at 2344-2254' 20-40% plagioclase, 5-10% quartz, and 30-65% fe-mags; increasing amounts epidote, garnet, and zoisite at 2392-2402'; considerable dark green chlorite on fractures; flat calcite veinlets dipping at 30° at 2255'; at 2363-2373' calcite as veinlets and pods, and in places completelt enclosing euhedral magnetite; magnetite as pods, veinlets and disseminated; magnetite both fracture filling and replacement; chalcopyrite fairly consistent as traces from 2312-2567' and ½% at 2394', 1% at 2408', ½% at 2507', and ½% at 2560-2565'; chalcopyrite along fractures at 2514-2524' and as small pods; chalcopyrite appears to be later than pyrite and pyrrhotite; at 2528' flat veinlet 3/4" wide contains quartz, calcite, and pyrite.

2567.0 - 2702.8 Mineralised hornfels, light gray to greenish in color; small amounts epidote, garnet, and zoisite in places; slightly chloritized, up to 10% carbonate; some actinolite at 2638-2648'; occasional veinlets calcite and quartz; up to 3% quartz at 2644-2657'; dark green chlorite along fractures; 1-10% magnetite at 2567-2590', 25-50% at 2590-2666', and 5-25% at 2666-2696', and 20-40% at 2696-2702.8%; magnetite occurring as veinlets, pods, and disseminated; 1% pyrite at 2567-2590', 3-10% at 2590-2603, 2-5% at 2603-2702.8'; trace to 3% pyrrhotite; trace to ½% chalcopyrite as grains, small pods, veinlets; chalcopyrite appears to be later than magnetite, pyrite, and pyrrhotite.

2702.8 - 2739.0 Mineralised quartz diorite with 30-70% actinolite, 5-10% epidote, scattered garnet, fair amount calcite, occasional quartz pod, 15-35% magnetite as veinlets, pods, and disseminated; 5% pyrite, trace to 2% pyrrhotite, trace chalcopyrite; 10-30% epidote and zoisite at 2732-2739'; slightly chloritized with 5-15% carbonate.

2739.0 - 2745.0 Skarn with up to 65% grossularite, 10-20% actinolite, 5-10% epidote and zoisite, 3% pyrite, 2% pyrrhotite, 10% magnetite.

2745.0 - 2757.0 Mineralized diorite, with small amount hornfels; with actinolite, garnet, epidote, zoisite, 5-10% calcite; 15% pyrite at 2749', 20% at 2757', balance 3-5%, 10% magnetite; 2% pyrrhotite.

2757.0 - 2775.0 Skarn with up to 35% garnet, actinolite, epidote, zoisite; 3-5% pyrite, trace to 2% pyrrhotite, 10% magnetite, trace chalcopyrite, up to 15% chloritized with some carbonate.

2775.0 - 2922.5 Mineralized quartz diorite, medium to fine-grained; with some hornfels; considerable zoisite at 2813'; at 2822'-2840' darke in color with 5-10% quartz and 20-30% femags; hornfelsic at 2908-2917'; 5-10% magnetite at 2775-2840', 10-35% at 2840-2854', and 5-10% at 2854-2922.5'; 3-10% pyrite, trace pyrrhotite; considerable chalcopyrite varying from a trace to 5%; chalcopyrite occurs as veinlets, small pods, and disseminated; at 2796 chalcopyrite appears to be replacing pyrrhotite, and is associated with a small amount sphalerite; some short intervals shows up to 10% chalcopyrite; some chalcopyrite along fractures; 5-25% silicified, 5-15% chlorite 10-20% carbonate.

2922.5 - 2982.0 Mineralized hornfels; with some diorite; up to 65% actinolite and 5-15% garnet at 1932-1941'; 2% pyrite, 5% magnetite, traces chalcopyrite; 10-15% chloritized; small amount carbonate.

2982.0 – 3045.0 Mineralized quartz diorite, with quartz, plagioclase, and hornblende; 10-25% chloritized with 5% carbonate; 3-10% pyrite; 15-45% magnetite with 45-50% magnetite at 3030-3035'; traces chalcopyrite and pyrrhotite; dark green chlorite on fractures; up to 50% zoisite and epidote at 3021'; 3" pod pyrite and pyrrhotite at 3025'; magnetite as veinlets, pods, and disseminated.

3045.0 – 3133.0 Mineralized hornfels and calc-silicates; gray in color banded at 45-65°; up to 60% actinolite, 45% garnet, epidote, zoisite, and calcite; small amount diorite at 3090'; dark green chlorite on fractures; up to 70% actinolite at 3102-3111'; occasional quartz pod; 10% chloritized with 10-15% carbonate; 5-15% pyrite at 3045-3073', 1-5% at 3073-3092', 15-25% at 3093-3097', and 5-10% at 3097-3133'; 3% magnetite at 3045-3056', 45% at 3057', 5-10% at 3058-3059', 30-40% at 3059-3073', 5% at 3073-3080', 30% at 3080-3085', 10-20% at 3085-3098', 30-45% at 3098-3117', 10-25% at 3117-3123', 45% at 3123-3128', and 20% at 3128-3133'; traces chalcopyrite with 1% chalcopyrite at 3099'; traces pyrrhotite; 2% quartz at 3099-3110'; chalcopyrite as diddeminated grains and as small pods; calcite as fracture folling.

3133.0 – 3140.0 Mineralized quartz diorite; with scattered chalcopyrite; 5-10% pyrite, 20-45% magnetite; slightly chloritized.

3140.0 – 3182.0 Mineralized hornfels, banding at 60°; epidote, garnet, actinolite, zoisite; both andradite and grossularite garnet; some hematite staining at 3477'; magnetite as veinlets, pods, and disseminated in groundmass; 20-50% magnetite, 3-7% pyrite, traces pyrrhotite, traces chalcopyrite; slightly chloritized.

3182.0 – 3201.0 Calc-silicate hornfels; slightly mineralized; banding at 45°; brecciated at 3184-3188'; ½-5%pyrite; ½-10% magnetite; trace to 5% pyrrhotite; traces chalcopyrite; slightly chlorite.

3201.0 – 3205.0 Mineralized hornfels with 5% pyrite, 45% magnetite, 5% pyrrhotite, and traces chalcopyrite.

3205.0 – 3244.0 Calc-silicate hornfels, banding at 65-70°; gray in color; mineralized at 3224-3227' with 20% pyrite and 15% pyrite, balance 3-5% pyrite and 2-5% magnetite; traces pyrrhotite; traces chalcopyrite at 3207 and 3211'; slightly chloritized.

3244.0 – 3253.0 Mineralized hornfels with 55% magnetite at 3244-3248' and 5-10% at 3248-3253'; 5-15% pyrite; 2% pyrrhotite; trace to ½% chalcopyrite; slightly silicified;

3253.0 – 3356.0 Calc-silicate hornfels, gray in color, slightly mineralized; 10-20% grossularite at 3253-3256'; at 3270' approximately 50% actinolite, 20-25% epidote, 5-10% zoisite, 5% chlorite, 5% pyrite, and ½% pyrrhotite; some diorite with hornfel at 3343-3353'; banding at 60-65° at 3253-3315', and 20-30° at 3315-3356'; at 3353-3356 only 1-2% garnet and 10-20%

actinolite; 10% pyrite at 3290', 8% at 3343', and 1-5% pyrite at balance of section; ½-2% magnetite; ½-2% pyrrhotite at 3253-3343 and 5% at 3343-3356'; trace to ½% chalcopyrite; slightly chloritized with 3-15% carbonate; chalcopyrite as veinlets, pods, and disseminated, also along fractures; drussy pyrite along some fractures.

3356.0 - 3404.0 Mineralized hornfels, same as above except with 5-20% pyrite and 5-25% magnetite at 3356-3392' and 30-50% magnetite at 3392-3404'; 2-5% pyrrhotite; traces chalcopyrite;

3404.0 - 3421.9 Calc-silicate hornfels, banded at 75°; with epidote, zoisite, actinolite, garnet, and calcite; slightly chloritized with 10% carbonate; 5-10% pyrite, 10% magnetite, trace chalcopyrite with 2% chalcopyrite at 3409'; 2-5% pyrrhotite with 35% 3413'.

Bottom: 3421.9 feet.

Hottentot
Hole 6-C

6000 0133 (0760)

.DDH-6C, Hott...
RDH to 186', Volc...

186'-200', Crystal tuffs + Soil zone, Tuffs highly weathered with clay + saussurite.

200'-202' Weathered soil zone, ferrogenous breccia, largely goethitic.

202 - 213 Weathere magnetite + garnet replacing impure limestone (probably Excelsior Fm.) 80% Goetite, 20% Jarosite. Highly fractured w. hematite on fractures.

213 - 218 As above garnet and magnetite. Variable but usually 20%-50% magnetite. Weathed.

218 - 234 Largely magnetite 70%-95%, Minor pyrite <1-2%

234 - 253 Magnetite w/ minor garnet and actinolite. Vuggy w. calcedony and some siderite? on fractures + in vugs. +5% sulfides as pyrite. Minor Cu stain on fractures. Limonite staining strong 238 - Magnetite brecciated and locally recemmented w chalcedony

253 - 269 Diorite dike w <1% py apparently on a high angle fault. Brecciated margins, Highly altered to clays, Iron stained.

269 - 295 Grey-green garnet and granular magnetite Magnetite 15-50%, 45° fractures w calcite, high ∠ (80°-85°) w quartz, pyrite, and chalcopyrite locally up to 10+%, from 288 to 288.

295 - 365 , Dense, grey-green garnet and granular magnetite. Magnetite ~~runs as high~~ from 15% to 80% of core. Blebs and seams of pyrite 1% to 8%. Blebs of chalcopyrite locally. Pods of actinolite locally

365 - 370 Contact zone, Silicified, brecciate sediments with some magnetite at top grading to diorite. Limonite stained (~100% goethite).

370 - 401 Highly broken zone, fault, in diorite. < .5% pyrite.

Hole bottomed in diorite, cemented.

Stopped at 401'.

5/20/69

 6000 0133 (0760)

Hole H6C was drilled during May 1969 and the following assay results were obtained:

Sample #	Depth	S %	Cu %	Fe %
R6C - 1	203-213	.068	.03	27.5
2	213-223	.064	.08	52.0
3	223-233	.085	.17	51.0
4	233-243	.710	.08	51.5
5	243-253	2.260	.21	54.5
6	253-263	1.180	.10	48.5
7	263-273	.390	.02	40.0
Average grade		.679	.099	46.23

The drill hole was sampled in 10 foot increments from 203 to 403 but only the top 70 feet was used for ore reserves. The interval from 273 to 393 averaged 1.296 % S, .099 % Cu, and 16.1 % Fe. The bottom 10 foot sample, from 393 to 403, was in the diorite intrusive and assayed .009 % S, .012 % Cu, and 2.10 % Fe.

Using a triangular configuration between holes 6, 6A, and 6C, and using the formula ½(a x b) the following ore reserve data was obtained:

Hole	Depth	Dimensions	Cubic Ft.	Tons	Grade % Fe	Cu	S
H6C	203-273	½(160x140) x 70	784,000 ÷ 9 =	87,100			
		½(45x28) x 70	44,100 ÷ 9 =	4,900			
				92,000	46.23	.099	.679

THE PROBABLE RESERVES OF BLOCKS 3 AND 6 NOW TOTAL:

706,987 TONS.

The average grade remains at 46.2% Fe, .10-.15% Cu and about .679% S.

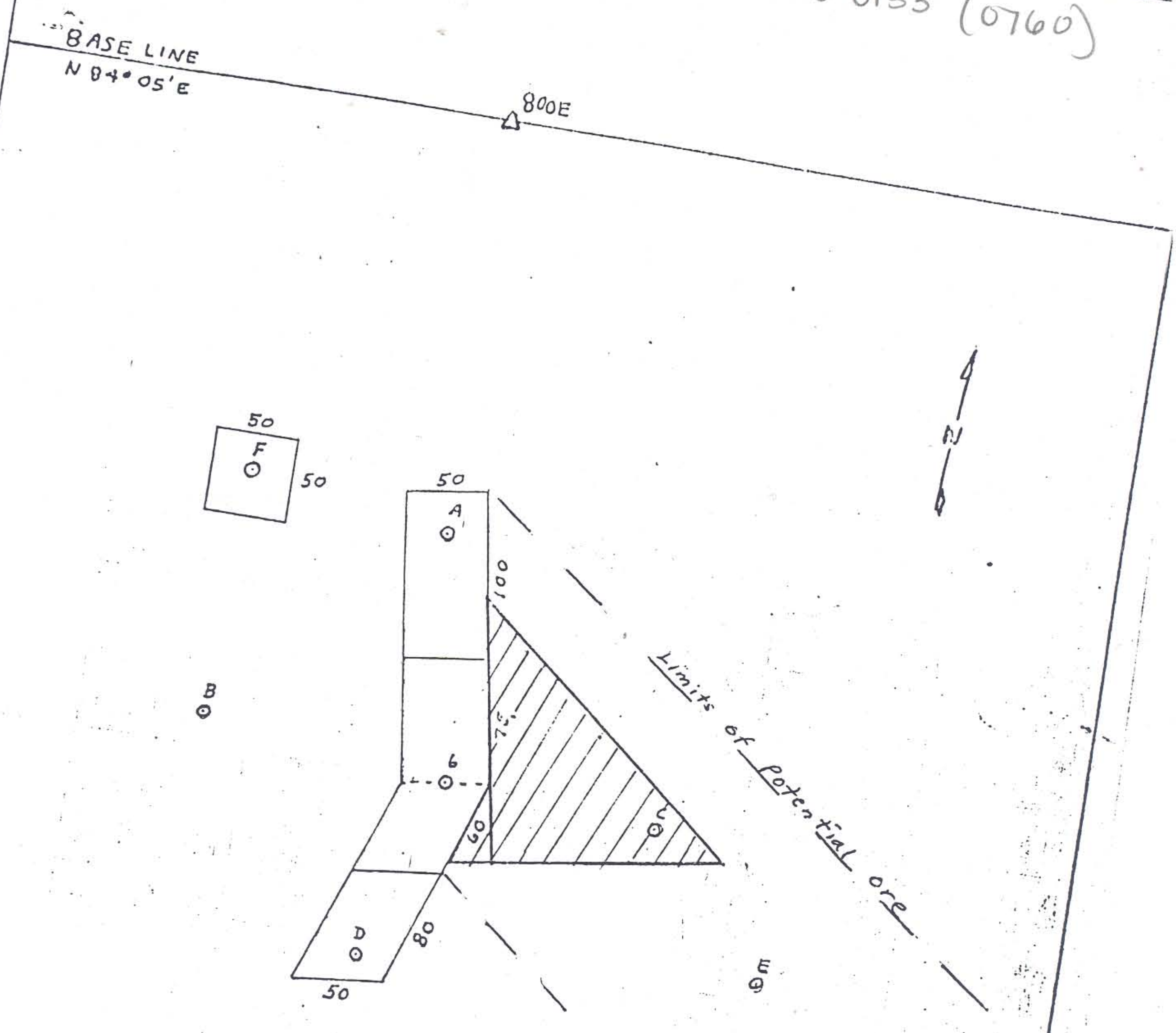
June 18, 1969

Respectfully Submitted,

John H. Volgamore

John H. Volgamore
Geologist

6000 0133 (0760)



ORE RESERVE BLOCKS
SERIES 6
DRILL HOLES

scale 1" = 100'
April 1969

/// ore block 6C
May 1969

Figure 2 A

6000 0133 (0760)

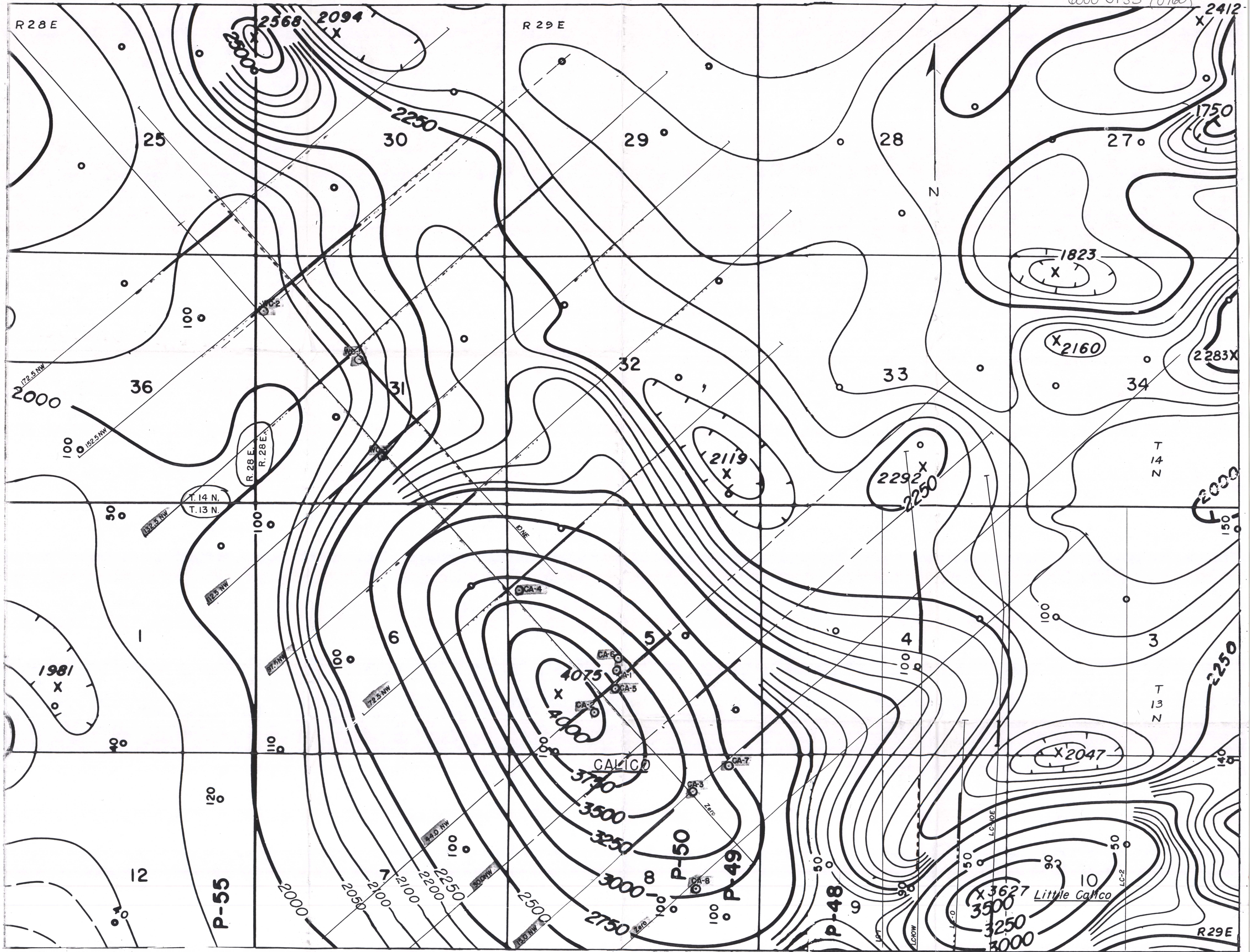


Plate __ Geophysical map of the Calico Deposit (from Idaho Mining Corp, 1969?; Aeromagnetic data from Lockwood, Kessler, & Bartlett, Inc., 1969.)

OMIT 50 gamma contours

Total intensity aeromagnetic contours 50 and 250 gamma intervals.

Survey altitude approx. 500' above mean surface

I.P. and ground magnetic survey lines showing IP anomaly.

IDAHO MINING CORPORATION — RENO, NEVADA — FILE:

WALKER RIVER PAIUTE RESERVATION

CALICO PROSPECT AREA

GEOPHYSICAL MAP

Map No. 5 B

0 500 1 2 3 4000'

Scale 1 In.= 1,000 ft.

6000 0133 (0760)

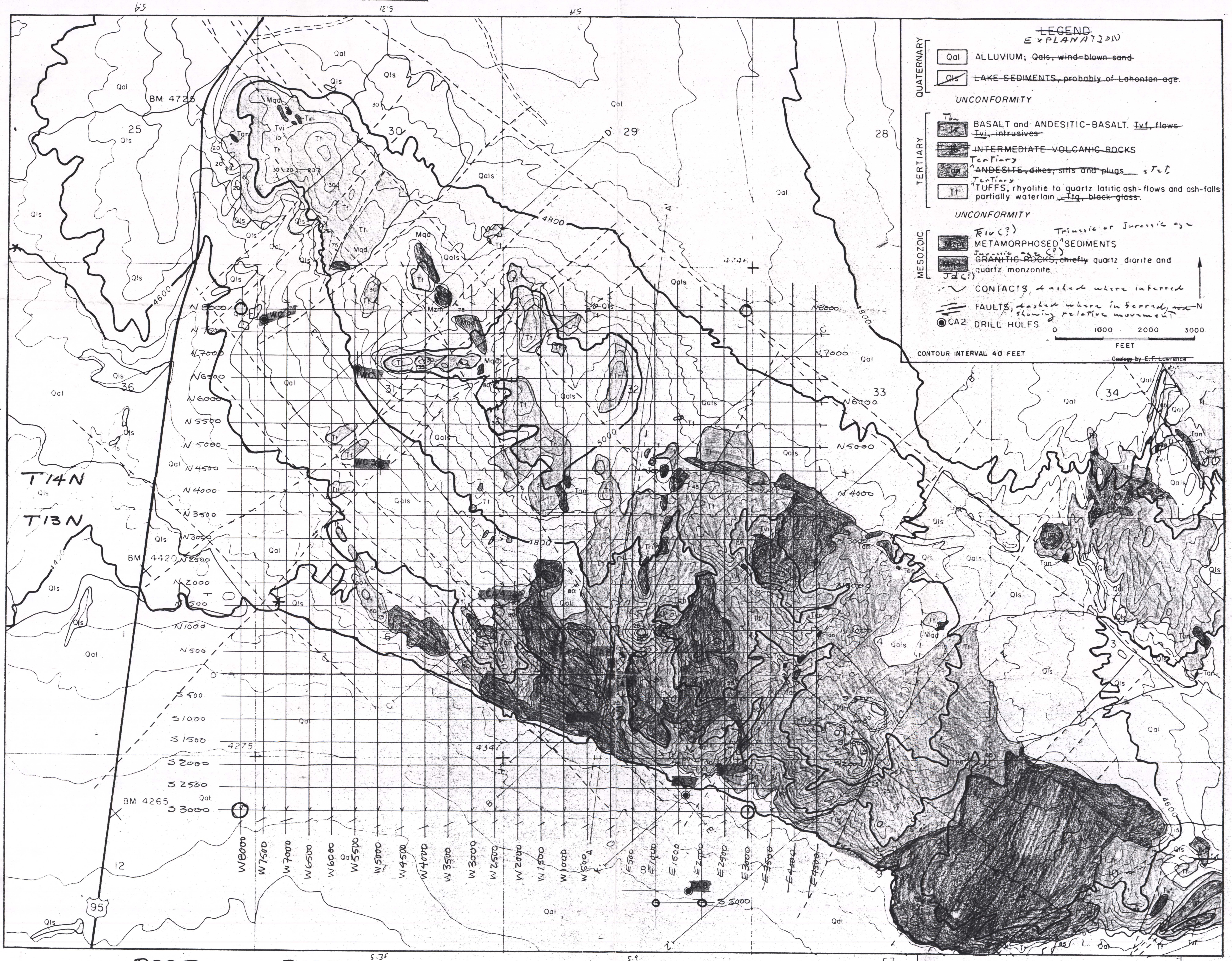


Plate — Geologic ~~map &~~ DDH Location map of the Calico Deposit (After Lawrence, 1969)

Do not write on drafting X-section lines

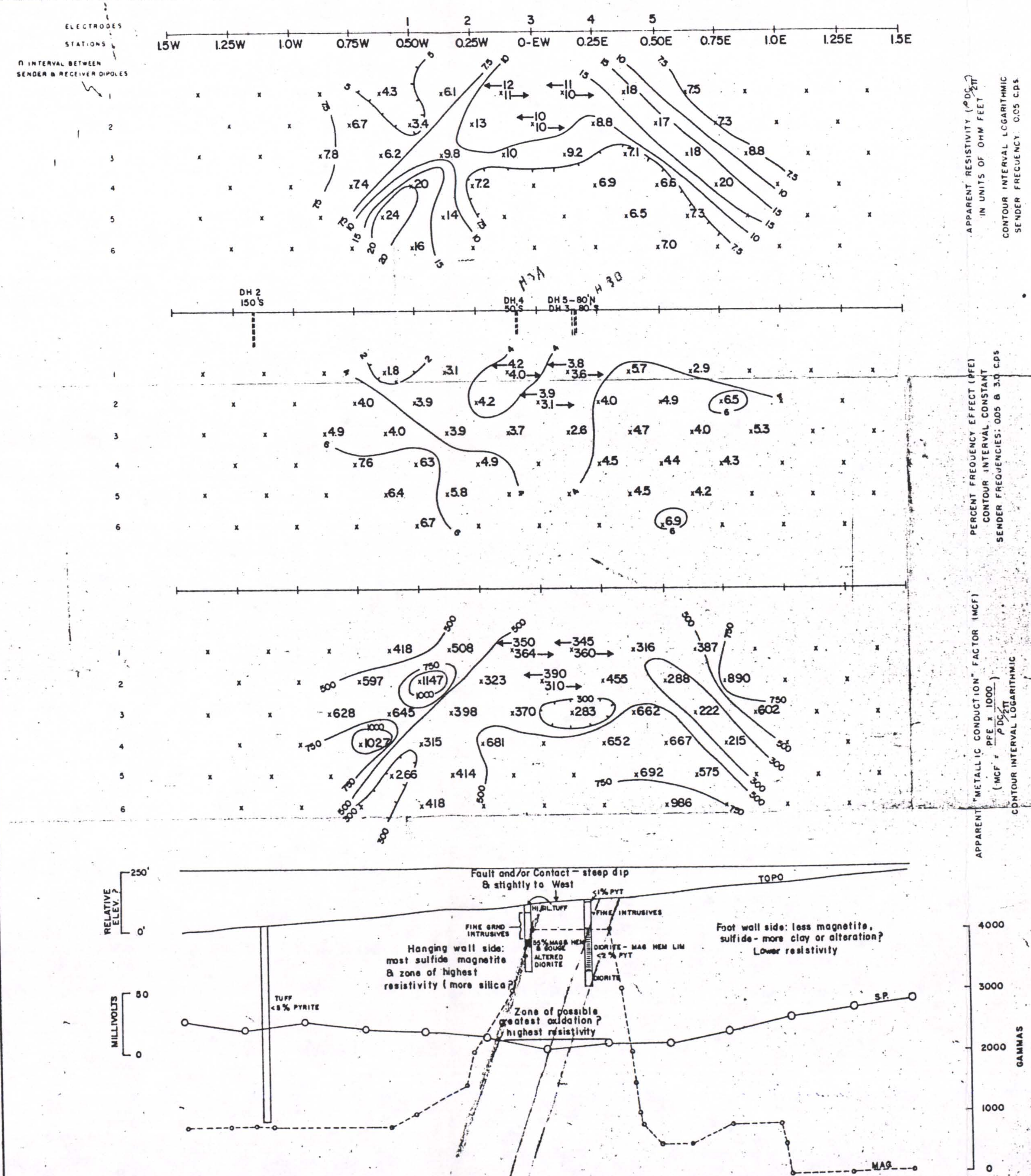
IDAHO MINING CORPORATION — RENO, NEVADA — FILE:

WALKER RIVER PAIUTE RESERVATION
Calico Prospect Area

GEOLOGIC MAP

Map No. 5A

6000 0133 (0760)



EXPLANATION

ELECTRODE ARRAY: 250' SENDER DIPOLE — n 250 — 250' RECEIVER DIPOLE

RELATIVE ANOMALY STRENGTH: VERY WEAK, WEAK, MODERATE, STRONG

LOOKING NORTH

SOUTH HOTTENTOT

SECTIONAL DATA SHEET
LINE NO. 1 (0-N/S)
INDUCED POLARIZATION TRAVERSE

HEINRICHS GEOEXPLORATION COMPANY
SCALE: 1" = 250'   DATE: AUG. 17, 1965

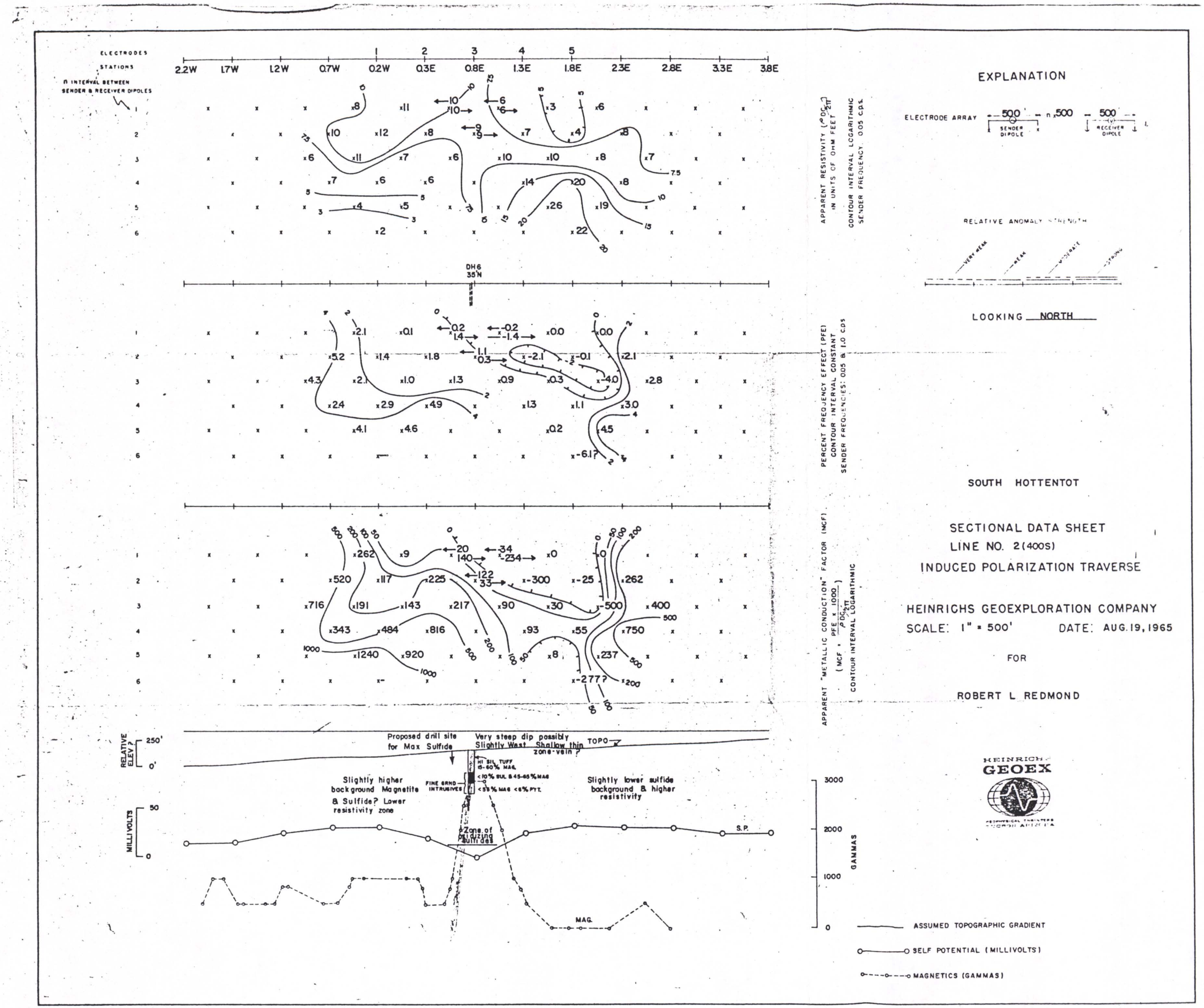
FOR

ROBERT L. REDMOND

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS TUCSON ARIZONA

—— ASSUMED TOPOGRAPHIC GRADIENT
o——o SELF POTENTIAL (MILLIVOLTS)
o- - -o MAGNETICS (GAMMAS)

6000 0133 (0760)



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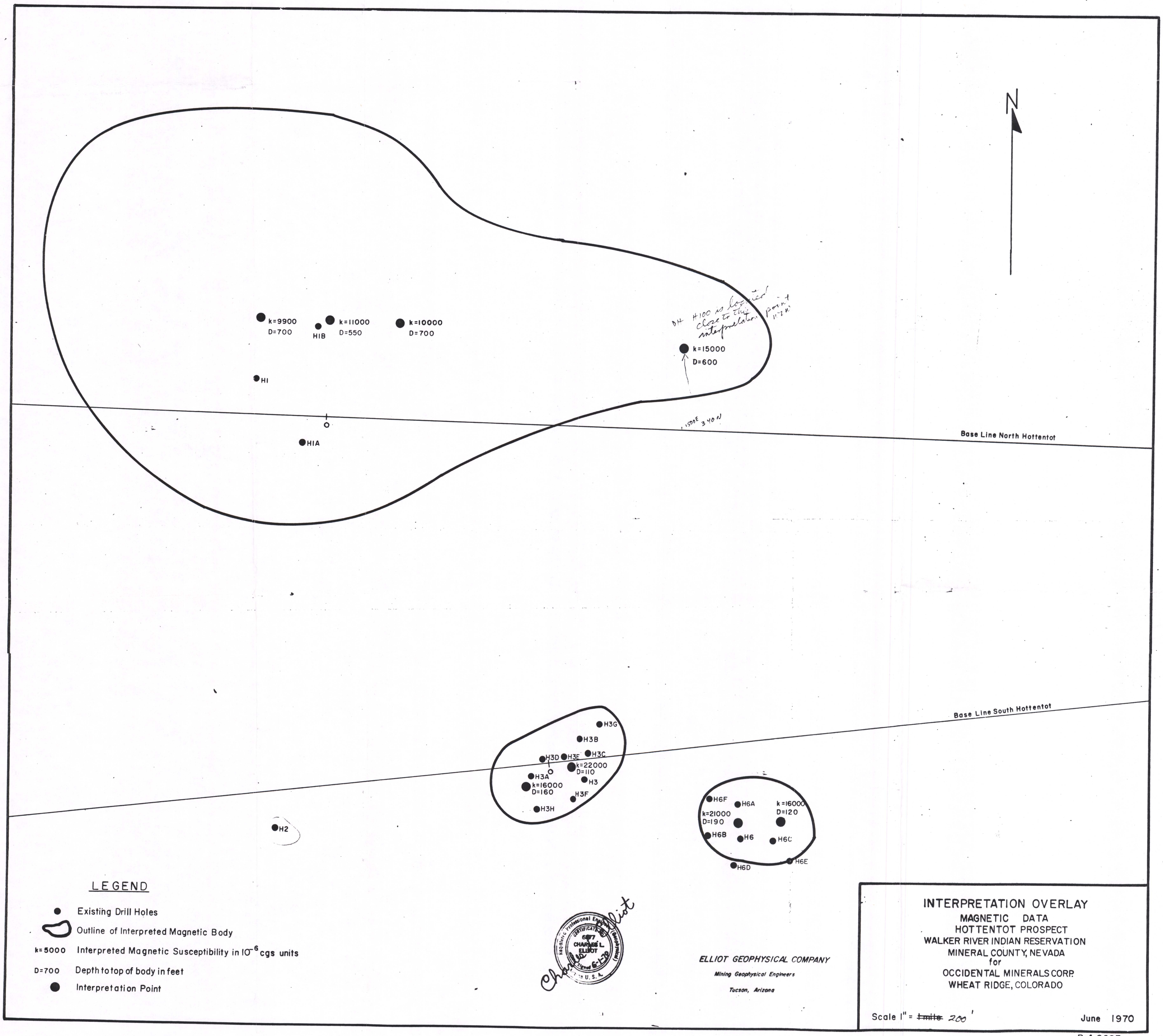

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