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GEOLOGIC REPORT

ON

THE CURRIE LINEAMENT - PORTION "A"

ELKO COUNTY, NEVADA

FOR

THE TETON EXPLORATION DRILLING CO., INC.

BY

KARL H. KUNDERT

RENO, NEVADA

JULY, 1971

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INTRODUCTION

In October of 1970, the writer presented a preliminary report to Mr. Phil Shockey, Chief Geologist of Teton Exploration Drilling Co., Inc., on the subject area.

This report was based on research into the possibility of the presence of an easterly-westerly structural-intrusive belt of unknown width, trending from the Ruby Mountains of Elko County, Nevada across an 80-mile strip, crossing in its course four northerly-trending mountain ranges, intervening valleys and four lesser-elevation hill areas, and terminating near Gold Hill, Utah, as delineated on Map II of that report. The basis for this presumption was the presence of seven exposure-areas of igneous rock of probable Mesozoic (?) age, intruding older sedimentary beds of probable Paleozoic age; mineralization of various types usually accompanied this intrusion. These locales of present and possible mineralization are noted in detail on Map II, accompanying the original report, written in September of 1970.

Literature suggesting this existence of what may be a deeply-buried shear zone in granitic-type intrusives was cited in the Eastern Nevada I.A.P.G. Guidebook, under authorship of Prof. Stringham of the University of Utah,

and Mr. Adair of Bear Creek Mining Company. This and other possibly supporting data for the existence of such a "lineament" is discussed in additional detail in the earlier report, and will not be repeated here.

Suffice it to say that the writer proposed a series of north-south lines, at one-mile intervals and of six-mile north-south length, to attempt to determine by the use of magnetics and soil-chemistry sampling if there were areas of similar buried sedimentary-igneous intrusion, which could be explored by drilling.

The area suggested for work consisted of only the western portion of the 80-mile belt, at that time and hereafter termed "Portion A", with its western terminus at Harrison Pass in the eastern Ruby Mountains, and its eastern edge near the location of Currie, on the Nevada Northern R.R. and U.S. Highway 93.

Mr. Shockey made a counter-proposal that the writer engage in a preliminary work-period, to ascertain the land-status, locate possible exposures not mapped on the at-that-time very sketchy mapping, and do some preliminary sampling. Also, during that time, more information could be obtained as to whether any existing mineralization was of a widely-disseminated type or of either replacement-type

in sediments or fissure-vein in the granitics. It was also suggested by Mr. Shockey that the west end of the proposed work-area be eliminated, and that work be concentrated in the sector from the north end of the Medicine Range (Ruby Hills on Map II), thus giving an east-west dimension of about 25 miles.

Thus, in the time allowed for the work, an area of approximately three townships was selected. These comprise Twp. 29 North-Ranges 61 and 62 East, in the western portion, and Twp. 28 North-Range 63 East, near the village of Currie. The latter township was included because of the reported presence of a granitic-type intrusive mass in the North Cherry Creek Mountains, where, by reports, no mining activity had ever occurred. If, indeed, this mass were present, intruding the so-called "PAL" sediments of Stringham, Adair, and Granger, it would be a likely locale for copper mineralization. (See #4 on Map II - 1970 report.)

The two western townships cited included the Delker Buttes, from the easternmost of which copper had been mined during World War 2, and which has had desultory work since its discovery in 1894. These three masses of granitics will be called "West Butte", "Middle Butte", and "East

Butte", even though the latter, for some obscure reason, is called by the Army Map Service (1/250,000 scale) "West Butte". As work progressed, and with the aid of the B.L.M. 1"/mile maps, it became very apparent that the locations of the various topographic features as shown on the maps originally presented were not correct, by as much as two or three miles in east-west orientation.

FIELD OPERATIONS

Field operations were carried out during the period of December 14 until June 10, to give Teton at least a week each month, or such an average in two months. The work was very much hampered by snow and rain, during one of the wettest years Elko County has ever experienced. Even the use of a four-wheel drive G.M.C. Suburban by the writer failed to make some areas accessible, and much of the area, particularly near the "Middle Butte" was covered on foot. In one place, near "West Butte", I was able to drive a four-foot lath its full length into mud and water, in February. Needless to say, I walked here!

Field headquarters were maintained in both Elko and the "Rock House", a deer camp in Ruby Valley; the latter location saved at least four hours driving time per day,

and was only about 30 miles distance from the center of the work area; Elko was from 100-125 miles driving-distance, depending on the route used.

There are very few section corners in the area worked; most of the cadastral corners put in by the B.L.M. are in the ranching areas, where control is more important than in the hilly and mountainous areas. Also, the roads as shown on the B.L.M. map are not always located correctly. In many cases the trails had to be traversed by Brunton and pacing or odometer to obtain even an approximate location of samples taken. Many of the roads traversed turn out to only be sheep-camp trails, perhaps used for only a short time.

As the work progressed, mapping was done of any significant structural features, such as jointing and fracturing in the granitics encountered, and particular effort was made to determine the presence of any quartz or calcite veining that might fill the fracture/jointing and possibly indicate the presence of favorable loci for mineralization.

In the area near the three Delker Buttes, and to the southwest, two types of samples were taken - soil and rock.

Rock samples were taken only in locations where quartz or calcite filled jointing in the granitics, fractures cut the granitics, or copper staining was evident.

Soil samples were taken for general "background" information, or near mineralized areas (100 or 200 feet away on the projected "strike" of such staining), to ascertain if this method could be used to enlarge sectors of enrichment.

In all, in this area, 52 samples were taken, and all assayed for copper, lead, zinc, and molybdenum, with five samples also run for gold, in addition.

These samples were all assayed by Rocky Mountain Geochemical Corporation of Reno; the moly values were obtained colorimetrically, the other values obtained by Atomic Absorption. On any samples where the copper p.p.m. exceeded 1000, a percentage assay was run; thus, in the case of WB 20, the p.p.m. value above 1000 copper turned out to be 4.5%.

In the eastern area, in Twp. 28 N.-Range 63 East, called "Cottonwood Canyon", both soil and rock samples were taken; some were assayed as were the Delker Buttes samples, some by Cold Extraction geochemistry, by using acetic acid solvent and dithizone-toluene color indicator.

For differentiation, as in the western area, soil samples are shown by a single circle; rock samples by a double one.

GEOLOGIC CONDITIONS - ROCK TYPES

On the Report Map accompanying this text, three different geologic types are represented.

The Menlo Park, California branch of the United States Geological Survey has now been working Elko County for the past three years, on its mapping program. Most of this work has been done by a Roger Hope, working out of Currie and the Rock House. This detail work has now replaced the "catch-basin" description of later intrusive rocks in the general area (called "KJi"), by five different intrusive types, ranging from Jurassic to Tertiary in age. The writer was fortunate enough to get a copy of the "Open File" map from the Nevada Bureau of Mines.

Thus, in the case of the three Delker Buttes, all called "KJi" previously, the two western ones are termed "i - various intrusives of unknown age", but probably Jurassic. The eastern-most of the buttes, where limestone, hornfels, and marble are present, is again called "i", but is also called "igneous-metamorphic complex", as well.

This differentiation is undoubtedly made because of the general absence of sediments and metasediments exposed in the two western buttes, although this condition does exist on the south end of the Middle Butte, where Mr. Shockey and Kundert were on December 15. In traversing the Middle and West Butte, much of them on foot, this is the only place where limestone was observed, off the East Butte, with the exception of the limestone outlier near the southeast corner of Twp. 29 N.-Range 61 East.

For identification on the Report Map, the granitic outcrops are indicated in pink, the sediments in blue, and near the west end of Cottonwood Canyon, Tertiary volcanics are shown in green. The small areas of Tertiary sediments in the general area were not shown on the map, inasmuch as the economic value of these beds, from a mining standpoint, is probably questionable.

Work in Cottonwood Canyon, both by vehicle and on foot, failed to show the granitic intrusive near the center of Twp. 28 N.-Range 63 E. No granitic outcrops were seen in the canyon nor its walls, and only one piece of granite float, about the size of two fists was found in the drainage.

It seems impossible that the work published by Stringham and Adair and Granger could have confused the

Tertiary flows over two miles to the west with granitics; I have as yet had no chance to discuss this discrepancy with Mr. Hope. The volcanic outcrop is mapped as being almost six miles in north-south dimension; the granitic one is shown as being only about two miles in extent. Mr. Hope shows no intrusives in the canyon, at all.

The limestones present in Cottonwood Canyon are mapped by Hope as either Permian Pequop or Park City, as are the ones in the East Delker Butte. Either one of these, as occurring in other mining districts, would be a favorable locale for either replacement deposits or metasomatic zones, with favorable porosity and permeability.

STRUCTURAL CONDITIONS

In the event that the "Currie Lineament" does exist as an east-west feature, to the writer it was important to establish structure and/or veining not aligned with the general northerly trend of the three buttes, the outstanding topographic features in the general area. Aerial photos studied in Reno established strong northwesterly and northeasterly alignments, as well as some almost due east-west.

Near the Silver Butte mine, co-ordinates III ½ - C, the photos show a strong N. 60 W. structure, which inter-

sects the three-fault N. 45 E. system on which the mine is located. It has been thought by the writer that there is a northeasterly structural connection between the Silver Butte mine fault-system and either the West or Middle Butte.

It is also thought that the abrupt change in strike of this fault system may be caused by the intersection of the cited N. 60 W. alignment with the three main faults. This change takes place near the section corner common to 22, 23, 26, and 27 southwest of the Silver Butte mine. Also, the basic igneous material on the dump here is very similar to the diorite or dacite diking found on the south edge of the West Butte, only 100 feet north of the trench in which copper was found. There was also this material mentioned as being north and northeast of the Silver Butte mine, as well as at the 600 level; all found on the surface in this location was a jasperoid outcrop, perhaps indicative of the presence of mineralization at depth, possibly not tested in the mine.

The township line common to Twps. 28 and 29 North may be a line of metallogenic zoning between the copper province to the north and the silver-lead-barite minerals found in the Silver Butte mine and the Mud Springs district

a mile to the southeast, where galena was found in east-west striking fractures.

In all, 14 structural trends were found in the three Delker Buttes which lend credence to an east-west alignment. These are described on a separate sheet with this report, as well as indicated on the report map.

LAND SITUATION

In general, it can be said that the Lani-Fialdini claim block is about as it was several years ago, when the writer was last there.

The land check made in the Elko County Court House indicates that, for the most part, annual labor has been done, or at least reported! This block is probably still somewhere around 125 unpatented claims or about 2,600 acres. The west edge of the block at the time that Freeport Sulphur had the option is shown by a heavy black line between the north ends of the East and Middle Buttes.

At present, the block is held under an option by Jim Fouts, ex-Baroid man, and Harvey Hamilton, a Geological Consultant of Salt Lake City. They would divulge nothing on the terms of the deal, and Lani had not even told them that Freeport had drilled the one hole to 540 feet, without

hitting ledge. They are drilling themselves, in a "poor-boy" situation, and having a difficult time with the garnet zones in the metasomatic areas. They told me that someone had drilled a deep hole in the southern part of the East Butte, but did not know the location. It is possible this may have been a Bear Creek test, if, as Mr. Shockey reported Mr. Robinson told him, they did some work here.

Especially in the area between the West Butte and the main northeasterly road traversing Twp. 29 N. - Range 60 E., the "CC" road, there are evidences of grid-lines being laid out. There is one dozeway trending east-west to the west of the West Butte that has all the appearances of a seismograph line; I was unable to find signs of shot-holes on it. This line terminates as the butte is approached.

According to the owners of the Rock House, where most of the crews stayed, Pan American, Gulf, and Union of California have all done seismic work in this general area; Gulf has also done considerable gravity work, mostly in the area near the Game Refuge to the southwest.

Numerous steel and aluminum tags can be found on sagebrush stems, which appear to be magnetometer or gravity stations. Most of these appear to be on mile or half-mile spacing; they could have been done for either minerals or petroleum exploration.

In the area north of the Silver Butte mine, as Mr. Shockey and Kundert noted on December 15, there appears to be recent staking. I was unable to look around the mine-area much, due to three men living at the old camp. From the extreme western edge of the report map to within a mile of the Silver Butte mine, I was unable to find any claim corners that looked valid.

To the east of the East Butte, adjoining the Lani block, to the southwest of the East Butte, and near the south end of the Middle Butte, one runs into many of the Cross-Krueger partnership claim corners. I could not find a discovery near the workings where Mr. Shockey and Kundert were on December 15; I assume by the nearby corners that this is now held by Mr. Cross. Since Krueger had moved back to Southern California from Currie, and since died of a heart attack, I do not know the status of these claims. The man now running the Currie filling station (where Krueger was) told me that he did not know of any pending deal to take care of the assessment work on that group, which is at least 88 claims (the K.K. group). Bill Kohlmoos had been "pumping" him the day before I was there. The small granitic outlier on the extreme southern end of the Middle Butte has had considerable dozing on it

fairly recently; to my eye, it was not in the right place for an extension of the mineralized zone located to the northeast. These claims were Cross's, where I could read the notices. I did gather that in Mr. Cross's not too healthy financial condition, he was open to someone joining him; there I left it.

Mr. Zweifel has finally run into trouble with his staking program. He is now using the "ecology" bit as a reason for his not tearing up the beautiful Nevada landscape with dozing for his location work. Nothing to date has been said about his complete disregard for the necessary claim corners. I did not see one, during the miles I traversed.

In the area near the south end of the Middle Butte, a Mr. Harry Warnecke of Elko appears to be "top-staking" Mr. Cross's claims; this may indicate doubt as to whether Cross had done his assessment work. One corner I found had been dated as recently as May of this year. I had not been able to find out if Mr. Warnecke was a "genuine" miner or merely a claim-selling "paper-hanger".

It is thought that the change in laws regarding claim-staking in Nevada will deter some of the "paper-hangers" in the future.

ASSAY RESULTS - REPORT MAP

On the accompanying report map, a red area has been used to indicate anomalous conditions, with regard to mineralization.

These colored zones can be considered as either being significant in values of copper, lead, zinc, moly by assaying or being above background T.H.M. (Total Heavy Metals) by Cold-Extraction geochemical soil-testing. Also, in the case of the Silver Butte and Mud Springs Districts, evident mineralization was present, and the land recently claimed; samples were not taken here.

In the case of the Medicine Springs mill-site, two rock and one soil sample (of tailings) showed anomalous amounts of heavy metals. The tailings sample showed above 1% zinc, which may have indicated some milling problems with the secondary zinc mined here. The two rock samples here evidently were pieces dumped for the milling.

In addition to the above, there can be considered 7 areas of anomalous conditions. These will be considered separately, and from west to east on the Report Map.

(#1) Soil Samples 1, 2, and 3, located near the "CC" road just north of the center of Twp. 28 N. - Range 59 E.

Of these, C-S-1, near the Ruby Valley No. 1 well, gave a total of 135 p.p.m., with zinc (90) predominating. This sample was taken well away from the well, pipe, and tank locations, as the writer has had experience with misleading zinc anomalies near galvanized pipe! An interesting note here is that C-R-1, a rock sample, was very low in T.H.M., being taken from a quartz vein in place. In the opinion of the writer, these above-normal soil values are connected with the NW-SE drainage which, from the aerial photos, possibly is a fault pattern emanating from the small intrusive mass near the southeast corner of the township. This could account for the migration of the zinc values and the low reading of the rock-in-place, zinc being, with moly, a great "traveler". This area could use more detail mapping.

(#2) The mineralized area near the West Butte, Map co-ordinates II ½-C. Most of the mineralization here was from the two east-west trenches shown near the south edge of the butte. The westernmost of these was also associated with an intensely altered fissure-vein in monzonite, with an extremely soft "gougy" zone in monzonite. Malachite and azurite were found here, and even though the rock looked favorable for a gold locale, the results were below

the perception-level of Atomic Absorption geochemistry. It is thought that this possible fault-zone, trending "across the grain" with most Nevada down-to-the-valley faults could make an intersection with one of the more normal-trending breaks in the valleys to the east or west. There was no limestone evident here, and the mineralization was of the fissure-vein type, in monzonite solely.

(#3) The anomalous area in the southern end of the main portion of the Middle Butte, near the center of Twp. 29 N.-Range 61 E. This sample, MB-1, was taken from a NW-SE quartz vein about 10 feet thick, where a cross-cut trench had been dug. It was abnormally high only in zinc, and no copper staining was evident. MB-3, a float sample, was low in all heavy metals, and was from another piece of quartz, transported down the hill by drainage, from an unknown source.

(#4) The main mineralized area in the larger southern outlier of the Middle Butte. This was the only location on the Middle Butte where sediments were found. It is thought that the entirely different situation here may be caused by a NW-SE fault between the two parts of the butte, possibly trending through the gap between the two portions. MB-4 was a rock sample taken near this gap; it was low in heavy metals content. The southern half of the outlier

where the workings are shown is extremely complex in structure. Not only is there a southwesterly fault cutting the pit and shallow incline (where Mr. Shockey and Kundert were), but the mineralized zone where azurite, malachite, and minor chrysocolla are found is also associated with an anticline in the limestone, trending S. 30 W. Mr. Bill Kohlmoos reports there is a 100' deep shaft in the incline, boarded over. No sulphides were found anywhere in the vicinity, but a northeast extended line on the strike of the structure did show slight copper staining in a small pit, up the elevation to the east. On what may be northeast and southwest extension of this structure, considerable dozing and pitting has been done. Samples 13, 14, and 15 were taken on what may have been thought to be a northeast extension. Sample 15 gave plus 320 p.p.m. on a small copper showing, by Cold Extraction geochemistry. Samples 13 and 14 were from trenches too shallow to reach this mineralized zone; they were not above Cold Extraction background.

(#5) and (#6) These are the two main showings of copper on the East Butte. I did not get a chance to examine these more fully, because of the presence of Fouts and Hamilton. They are both on typical skarn zones, with many garnets, epidote, and magnetite. The interesting

structural feature here is that where the granite footwall is exposed, in both areas, its contact with the sediments is either slightly north or south of east-west, as indicated on the Report Map. There are many differences in the mapping here as done by Freeport Sulphur and now by Mr. Hope. Where Freeport shows the top of the magnetic anomaly, Hope shows nothing but intrusives; a contact of the sort that would produce the magnetic closure is hard to believe in this situation, unless the stocklike granite mass "silled out" above the sediments. Again, it is definitely conjectural if the I.P. anomaly Freeport drilled may have been a base-metal anomaly, with possible lead and other sulphides, and not necessarily accompanied by magnetite, as is the copper deposit in the outcrop areas.

Many I.P. anomalies are drilled in locations where magnetite strengths are not present, and, in fact, in the case of some porphyry coppers, where the magnetite is now limonitic and diamagnetic, due to the metallizing waters that brought in the copper. This, in spite of the fact that the west side of the Freeport magnetic map has a configuration that indicates the contours could be opening up to the west, for another possible magnetic high. We have never known whether the lack of magnetic values near

the I.P. anomaly meant no magnetics was done there, or if the information was merely withheld from Lani and Fialdini!

(#7) This anomalous area, supported by the results of five samples, two rock and three soil, lies in Cottonwood Canyon, north of the center of Twp. 28 N. - Range 63 E. Both samples C-R-4 and C-R-3 were high in zinc values, with 3 also high in lead. There was no evidence of any unusual copper levels here, which was disappointing in view of the fact that the reported intrusive here, never found, was part of the so-called "Currie Lineament" in the writer's 1970 report. If the location of the reported intrusive is accurate, and there is doubt here, it is perhaps indicative that there may be some igneous presence coinciding with the high metal values. Due to the weather at the time I was last there, I was unable to spend more than a few hours. Samples taken from the zone of contact between the mapped volcanics and the sediments to the west were only on background for Cold Extraction, being at the 0.5 p.p.m. level.

Some portions of this so-called flow area would bear additional work. I would question that it is all volcanics, and some of the rock had a definitely porphyritic texture, resembling the basic intrusives at the Silver Butte mine and the south end of the Middle Butte. There was still

from one to two feet of snow on the east slope, where I sampled, and close work was impossible, even before the hail started, and I got "weathered out". Again, if any mineralization is here, it may be in the same metallogenic-zoning belt away from the intrusives in which the Silver Butte-Mud Springs districts lie, and the primary values may be in lead-silver-zinc.

A large portion of the eastern part of this township is mapped as Permian Park City by Hope, now. Much of the limestone in the canyon had the very fetid odor when struck with a hammer, similar to some phosphate rocks in Idaho and Utah. Inasmuch as the two upper members of the Park City are now considered as Phosphoria equivalents, three samples were also run for phosphate. These were C-R-3,4,6. None of them showed a significant amount of phosphate, all being under 0.2%.

CONCLUSIONS

From the work that has been done, it can be fairly well established that there is possibly no large disseminated granitic body carrying significant amounts of copper, that is exposed. There also seems to be no area of the West Butte exposed where there are metasomatic

contacts, similar to the East Butte, and possibly the Middle Butte.

The only copper showings, and very small, on the West Butte were definitely in a fissure vein in the monzonite, on a possible fault intersection. This showing of copper is on one of the writer's east-west structural aligaments, but is of very narrow width. It is still believed that extensions of this structure may be under valley-fill; more of this later.

Regarding the Middle Butte, the entire north part of this granitic mass, north of the workings on the larger south outlier, seems to be barren of any mineralization, outside of the MB 1 and MB 2 trench. The only evidence that there are possibilities for some structural alignment here are the two quartz veins, which trend east-west. The northernmost of these was barren of any anomalous T.H.M. values (MB 7 and 8). No copper staining was evident in either of these veins.

At the present time, there is no pertinent discussion possible on the East Butte, as it is tied up for a time by the option of Fouts and Hamilton. They gave no information on the period of the agreement. I was unable to contact Lani and Fialdini on the last day I was in Ely. The option

is not recorded in the Elko County Court House, not unusual in cases such as this.

In the opinion of the writer, there is still a possibility some of the north or south of east-west structures in the East Butte may extend under the valley-fill between there and the Middle Butte; however, the land situation here argues against much work in this sector.

On the basis of present information, it is also doubtful if there is any granitic intrusion existing in Cottonwood Canyon. If there is, it may only be a small area, and not a long north-south trend, as indicated in earlier publications.

RECOMMENDATIONS

On the basis of the work that has been done, it is recommended that the rectangular area outlined in brown be considered for additional work.

In the opinion of the writer, the prime exploration targets are still in the valleys, with the added knowledge of east-west structure as gained by inspection and sampling.

One difference now is that perhaps we have gained some knowledge in the presence of northwest and northeast structure as well.

So far, we have neither proved nor disproved the presence of the "Currie Lineament" as a major feature. We have established the fact that, at least on the surface, we do not have a large disseminated copper deposit of even low p.p.m. levels in the three monzonite bodies comprising the Delker Buttes. Thus, we cannot compare the granitic exposures with Twin Buttes of Arizona, with old workings of high-grade copper as "leads", on the basis of surface exposures. However, Twin Buttes would never have been found on the basis of surface values alone!

It is recommended that north-south lines at one-mile intervals be run, as shown on the Report Map, within the area bounded in brown, and located on the interior brown lines. Again here, it is recommended that stations at 200-foot intervals be evaluated by means of magnetics and geochemistry. It is also recommended that with the knowledge we have gained of structure, that lines be run east-west on the same spacing and the same 200-foot stationing.

The writer firmly believes that there is some kind of a north-easterly structure between the Silver Butte mine

and the copper showings at the south end of the Middle Butte. This would be near the north one-third of Twp. 28 N. - Range 61 E.

I also think that there is a connection between the easterly and westerly structures established in the Middle and West Buttes.

This situation could also exist in the area between the East and Middle Butte, but at the present time, the land situation precludes much work there.

If the lines indicated were run, there would be a total of 45 line-miles east-west and 48 line-miles north-south, for a total of about 93 line-miles.

It is believed that the land situation here would be favorable, once the Cross claims at the south end of the Middle Butte were gotten away from, and to the south, we would be a mile north of the Silver Butte group.

If we use a total figure of approximately 93 line-miles, a progress rate of about two miles per day, with a two-man crew, as suggested in the 1970 report, would mean about 45 days' work. An estimated cost of $225.00 per day was used in the previous estimate. With an adjusted Consultant's fee of $100 per day, this figure would be reduced to $200.00 per day, or about $9,000 estimated cost for the program as suggested.

This figure would include fees, field help, trailer and food expense, and $50 per day for incidentals and vehicle cost.

In the event this work is carried out, a field camp trailer could be set up at the Middle Butte, which would be a centralized location.

It is thought that the north end of the program could be carried out with little knowledge of the work's being done, as there is very little traffic in that part of the area. To the south, and especially along the road in the north tier of sections of Twp. 28 N., Range 61 E., there are more people generally. This is the route taken by Mr. Shockey and Kundert in last December, and is used in going from Ruby Valley to the Currie area.

It is also felt by the writer that more work should be done in the area west and northwest of the Silver Butte mine, and also in the Cottonwood Canyon area; this work could be held in abeyance, and would require more of the mapping and scouting that has already been done in the area suggested for additional work.

Should any of the text of the report or the Report Map need clarification, please let me know.

Respectfully submitted,

KARL H. KUNDERT
JULY, 1971
RENO, NEVADA

THE CURRIE LINEAMENT - "A" PORTION

ALIGNMENTS WITH EAST-WEST COMPONENTS

(1) Three-fault system through Silver Butte Mine - N. 45 E.- Possible connection with West or Middle Butte.

(2) Northwest drainage pattern from igneous mass near south-east corner of Twp. 28 N.-Rge.59 E.-To high T.H.M. C-S-1.

(3) Diorite intrusive dike on south edge of West Butte- Parallel to two copper-bearing trenches-Strikes N. 80 E.

(4) Two trenches on shear zone on south edge of West Butte - Strike N. 80 E.

(5) Fracture and jointing in monzonite at Samples WB 1-4. Strikes N. 80 E. - Extension of 4?

(6) Fracture pattern; quartz-breccia-filled; samples WB 15,16.

(7) Northwesterly and northeasterly trending fracture patterns; quartz and calcite-filled; middle West Butte.

(8) S. 65 W. fault cutting pit in workings on larger south outlier of Middle Butte. Co-ords II 1/2 - C 1/2.

(9) Questionable NW-SE fault in trench at MB 15 sample.

(10) Northwesterly quartz vein near south end of main Middle Butte; samples MB 1 and 2.

(11) Northwesterly quartz vein near middle of main Middle Butte; samples MB 7 and 8.

(12) East-west fractures in small outlier at extreme north end of Middle Butte; co-ordinates D-II.

(13) S. 80 W. strike of granite-sediments contact at north workings of East Butte.

(14) N. 70 W. contact of granite and sediments in south workings of East Butte. Near D.H. #2 of Freeport Sulphur which was not drilled. Incline here shows N. 70 W. footwall contact of granitics.

REFERENCES

(1) I.A.P.G. GUIDEBOOK FOR EAST CENTRAL NEVADA - Page 229; "The Intrusive Igneous Rocks of East Central Nevada" by Adair and Stringham.

(2) "Geology and Mineral Resources of Elko County, Nevada"; Nevada Bureau of Mines Bulletin #54 by Granger,H.E., et al.

(3) Notes on Some Mining Districts in Eastern Nevada - U.S.G.S. Bulletin 648 by James W. Hill.

(4) Army Map Service - ELKO sheet - scale 1/250,000.

(5) Hope, Roger - U.S.G.S. 1968, 1969, 1970, unpublished geologic mapping of Elko County, Nevada.

(6) Permian and Triassic biostratigraphy of the Medicine Range, northeastern Nevada; Wyoming Geological Assoc., Earth Science Bulletin v. 1, no. 4, p. 25-44.

(7) The stratigraphy and structure of the region surrounding Currie, Elko County, Nevada - Univ. of Washington, M.A. thesis.

(8) Bureau of Land Management Grazing Service maps; scale 1"/mile; Maps #34 and 35.