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PERRY, KNOX, KAUFMAN, INC.

MINERAL EXPLORATION AND DEVELOPMENT

Mr. Paul Eimon
Manager of Exploration
Essex International
1704 W. Grant Rd.
Tucson, Arizona 85705

Spokane
April 10, 1971

Dear Mr. Eimon:

Further to our phone conversation of yesterday; I am handwriting this letter to expedite your receiving this data. The enclosed information will probably be sufficient to enable you to decide whether the Kelsey prospect might be worthy of further investigation by Essex International.

Perry, Knox, Kaufman, Inc. has been carrying out exploration on the Kelsey prospect for St. Joe Minerals Corp. Prior to St. Joe's work Canadian Superior had carried out exploration on the property. Total expenditures by Canadian Superior and St. Joe approximate $200,000.00. St. Joe - Canadian Superior believe that the drilling to date does indicate a strong probability that a substantial tonnage of .3 to .4% Cu exists. Since neither of these companies are primarily copper oriented, a .3 to .4% Cu ore body is not of prime interest to them.

Perry, Knox, Kaufman feels that since large favorable areas on the property have not been drilled and some notable intersections of + .5% Cu have been encountered in the drilling to date, there is still a reasonable chance that a major ore body of + .5% Cu could occur.

St. Joe – Canadian Superior disagree with PKK on this evaluation.

I will not go into detail in regard to the land situation at this point but will describe the basic situation if Essex were to go ahead.

- You would be acquiring rights to approximately 112 claims.
- Minimum expenditures for Essex would be $45,000 for the first year, $100,000 for the second year, and $60,000 for the third year.
- The total end price for all optioned claims would be approximately $392,500.00
- Two types of interest arrangements would be possible dependent upon the policies of underlying parties

1) Essex – 54%

Other participating interests – 36% (after minimum expenditure of approx. $200,000 by Essex).

net profits (carried interests) – 10% (out of production after all pre-production costs are paid).

2) Essex – 68%

* net profits (carried interests) – 32% (out of production after all pre-production costs are paid).

* There is a remote possibility that the 32% could be reduced to 27% depending upon the willingness of one of the key claim owners ~~willingness~~ to reduce their carried interest.

If this prospect is of interest to Essex we would be happy to tour the property with you. We would suggest doing this as soon as possible. If the prospect is not of interest we would appreciate your returning the data to us.

Sincerely yours,

M. Kaufman

P.S. Perry, Knox, Kaufman Inc. would propose to continue carrying out the project.

3 FILE

To: N. H. Donald, Jr. } st goe
E. R. Lea

From: Perry, Knox, Kaufman, Inc.

Subject: KELSEY PROJECT EXPLORATION SUMMARY AND RECOMMENDATION

Date: February 15, 1971

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2/15/71

To: N. H. Donald, Jr.
E. R. Lea

From: Perry, Knox, Kaufman, Inc.

Subject: KELSEY PROJECT EXPLORATION SUMMARY AND RECOMMENDATION

I. SUMMARY AND RECOMMENDATION

The Kelsey Prospect includes 83 patented and valid unpatented claims and 2 patented tracts in Washington and 29 claims situated immediately over the international boundary in B. C.; it is located approximately 4 miles northwest of Oroville, Washington, and 2½ miles southwest of Osoyoos, B. C. The property situation must be considered generally favorable for mining purposes. Depending on whether or not Canadian Superior and/or Inland Copper elect to participate (as required in the near future), St. Joe can earn an interest ranging from 40% to 75% by contributing from 4/7 to 100% of the costs during the exploration stage of the project. Although the property situation is somewhat complicated, it is now fairly well understood, and critical land acquisition is essentially complete.

The Kelsey Prospect area is underlain by Permian-Triassic (?) sedimentary rocks and volcanics (greenstones) which have been intruded by Mesozoic (?) diorite, quartz diorite, and gabbro (?) bodies designated by the U.S.G.S. as the Silvernail Pluton. This "pluton" appears to be comprised of thick sills and/or dikes interlayered with volcanic and sedimentary rocks. A source plug probably exists somewhere within or adjacent to this intrusive-volcanic-sedimentary complex. Eocene alkalic intrusives in diatremes and dacite plugs post-date the Mesozoic rocks as do Eocene conglomerates.

The pre-Silvernail rocks appear to be folded along northerly axes, and there is evidence of thrust or reverse faulting, especially in the "pluton".

An altered (generally propylitic) and mineralized zone (copper-molybdenum, minor gold-silver) +2½ miles by +1 mile is localized in the Silvernail "pluton" and in pre-Silvernail volcanics and sediments in proximity to the intrusive rocks. Within the intrusive rocks and in the volcanics and sediments in immediate proximity, pervasive veinlets and minor disseminations, chiefly of chalcopyrite and of chalcopyrite-pyrite, occur over large areas and to substantial depths. South of the "pluton" small massive metal (iron-copper) contact and/or replacement deposits outcrop at surface in the pre-Silvernail rocks, and north of the "pluton" replacement deposits containing significant gold have been mined.

A substantial amount of geological and geophysical work has been completed, and several drilling programs have been undertaken on the basis of these efforts. Geological work has delineated the zone of extensive alteration and copper-molybdenum mineralization mentioned above, and geophysical surveys have indicated numerous favorable drilling targets within this zone.

Drilling of some of these targets has indicated the possibility that economic copper-molybdenum mineralization may occur within the prospect area, and the probability that large tonnages of 0.30% to a 0.40% copper might exist near surface in portions of the prospect area already drilled.

The more significant results of the drilling program are as follows: Hole K-1, 9' to 245' - average .344% Cu, or 9' to 615' - average .282% Cu; Hole K-2, 105 to 551' - average .318% Cu and .004% Mo, including 105' to 170' - average .707% Cu and 530' to 551' - average 1.521% Cu; Hole K-3, 10' to 90' - average .407% Cu and .013% Mo, and 430' to 442' - average 2.192% Cu and .032% Mo; Hole K-6, 30' to 130' - average .36% Cu and .007% Mo; and Hole K-7, 530' to 590' - average .456% Cu and .007% Mo.

Though the drilling to date has not encountered substantial intersections of what would currently be considered ore grade material, the widespread occurrence of thin ore grade intervals and thick intervals of +.34% Cu make it apparent that a bulk, low grade, copper-molybdenum deposit (economic under present conditions) could possibly exist within the prospect area. There is also potential for significant higher grade contact or replacement type deposits. Large areas in the altered, mineralized zone which appear to be geologically favorable and which are characterized by anomalous I. P. response have not yet been drilled. Until these areas have been tested, the possibility of a large economic copper/molybdenum deposit cannot be ruled out.

A minimum drilling program consisting of 5 to 6 vertical holes (total footage 2950' to 3950') is recommended to test the more obvious favorable undrilled areas on the Kelsey prospect. The estimated total cost of a 3950 foot drilling program is $63,503.00 (see itemized cost estimate under Recommendations).

If the results of this program were to prove negative, consideration should be given to the advisability of evaluating the property for its open pit 0.3% to 0.4% copper potential with the idea of maintaining a long term hold position if a substantial reserve of this material could be delineated. Furthermore, the depth potential of the area has not yet been adequately tested and should be seriously considered.

II. GENERAL

The Kelsey area was one of the specific localities originally suggested for investigation in the Northwest Project proposal. Based upon library research it appeared to be one of the more favorable bulk low grade copper/molybdenum prospects in the Northwest region. Field examination of the prospect in the summer of 1969 indicated that further work would be warranted if the ground could be acquired on reasonable terms, contingent upon evaluation work carried out on the prospect by Canadian Superior Exploration Ltd. during the previous year. A review of this work led us to believe that favorable exploration potential remained at depth under the area that Canadian Superior had drilled, and in other portions of the property not tested by them.

As Canadian Superior held a large portion of the critical ground in the prospect area, an assignment of their holdings was negotiated. After long and arduous, but finally successful, negotiations with parties owning other critical ground not held by Canadian Superior, St. Joe-PKM initiated exploration work on the prospect in May, 1970. As exploration results were moderately encouraging, additional lands were acquired by location, purchase and option during 1970 in order to achieve greater control of the entire mineralized area.

III. GEOLOGY

A. Lithology

1. Paleozoic-Mesozoic Sedimentary and Volcanic Rocks. The oldest rocks exposed in the Kelsey Prospect area are Permian sedimentary units including siltstone, graywacke, slate, marble, and conglomerate, which the U.S.G.S. has correlated with the Anarchist series of British Columbia. Large areas in the southern and northwestern portions of the claim group are underlain by fine-grained andesitic to basaltic (?) greenstones which are generally massive. The U.S.G.S. has mapped two ages of greenstone, one Permian or Triassic which they correlate with the Koban formation recognized in British Columbia, and the other Jurassic or Cretaceous. From our observations it appears extremely difficult to identify distinct characteristics which would enable us to clearly recognize the two ages of greenstone indicated by the U.S.G.S. Also, much of the section mapped as Permian sedimentary rocks, especially the siltstone and slate units, is fine-grained and green. It is often difficult to clearly differentiate between these rocks and the greenstones, and it is possible that some of these units mapped as sedimentary might be volcanic.

2. Mesozoic (?) intrusive rocks. The older sedimentary and volcanic units have been intruded by diorite, gabbro (?), quartz diorite, and granodiorite, probably of late Mesozoic age, which form two distinct intrusive bodies within the Kelsey Prospect area.

   One of these masses, which on surface plan appears to be a small stock, underlies a large portion of the Kelsey Prospect both in Washington and B. C. The U.S.G.S. has designated this unit as the Silvernail pluton and has mapped it as a fine-grained gabbro with a core area of quartz diorite. It appears to us that much of the area mapped by the U.S.G.S. as gabbro is closer in composition to diorite. The dominant rock types of this intrusive complex based on drill core studies appear in hand specimen to be fine-grained, green, quartz diorite, quartz diorite porphyry, and diorite. There is an abundance of included greenstone and sedimentary material, and all

of the deeper drill holes bottomed in volcanic or sedimentary rocks. It is probable that the apparent compositions of the intrusive rocks have been influenced by the amount and composition of assimilated material.

A small area along the most southerly contact of the Silvernail "pluton", both within the intrusive and in the greenstones, contains outcrops of two types of breccias. One type consists of a fine-grained greenstone matrix with fragments of Silvernail intrusive, while the other consists of a fine-grained green to black matrix containing fragments of white quartzite, and minor fragments of Silvernail intrusive.

The north portion of the Butler claims in B. C. is underlain by granodiorite which forms the south marginof a stock (?). This intrusive generally is lighter colored, slightly coarser grained and contains better formed mineral grains than the rocks of the Silvernail "pluton". It is probable that this granodiorite is closely related in age to the Silvernail "pluton" and that both of these units bear some relationship to the Kruger Mountain syenites which outcrop several miles to the west of the Kelsey Prospect.

3. Eocene Intrusive Rocks. Plugs of hornblende dacite porphyry have intruded the Paleozoic and Mesozoic rocks. Alkalic rocks (fenite, malignite, and syenite) have been recognized by the U.S.G.S. immediately west of Oroville (Oroville diatreme) located in T40N, R27E, SW Sect. 21, and south of the Shankers Bend of the Similkameen River (Shankers Bend diatreme) located in T40N, R26E, sections 13 and 14. The age relationship between the dacite porphyry plugs and the alkalic diatreme rocks cannot be determined.

4. Eocene Sedimentary Rocks. A peculiar conglomerate derived chiefly from granitic rocks outcrops over small areas on the southeastern and western portions of the Kelsey claims, and over large areas southeast and south of the claims. This unit is characterized by small to very large boulders of granitic rock in a finer matrix which is unidentifiable in hand specimen but is probably comprised partially of granitic pebbles. The age relationship between this unit and the Eocene intrusive rocks is not certain.

5. Pleistocene Alluvium. Small areas within the property boundary are covered by glacial silt, and the valley east of the claims is filled with alluvium. The glacial cover within the claims is shallow, but the alluvium is probably many hundreds of feet thick in the valley to the east.

B. Structure

1. Major Structural Features. It is probable that the Okanogan Valley, which lies immediately east of the Kelsey Prospect, is partially controlled by major fault zones, but the nature of these hypothesized fault zones is not certain.

It is probable that the alkalic intrusive rocks associated with the diatremes and the Eocene dacite porphyry plugs have emanated from intrusives controlled by deep-seated structures. These same structures might also have influenced the emplacement of the earlier Mesozoic intrusions.

Evidence derived from our drilling suggests that the Silvernail "pluton" is not a simple stock as it appears to be in plan. Most of the holes drilled in the "pluton" intersected predominantly intrusive rocks, but numerous sections contained abundant included volcanic and sedimentary rock which generally appear to be interlayered with the intrusive. All of the deeper holes bottomed in sections containing predominantly volcanic or sedimentary rock, and two of the holes (K-3 and K-4) encountered substantial thicknesses largely composed of volcanic or sedimentary rock in their bottom intervals. Evidence of possible compositional layering in the intrusive exists in hole K-1, which contains quartz diorite in its upper portions grading to diorite below 350 feet which grades to quartz diorite (seen in dikes or sills) below 830 feet. Also, in all of the holes containing abundant volcanic or sedimentary rock in their lower intervals the intrusive rocks immediately above and within these intervals are more acidic than in higher parts of the holes. It appears that the portions of the Silvernal complex thus far drilled might be comprised of a series of thick sills and/or dikes. It is not unreasonable to assume that a source plug might exist somewhere in the area.

2. Bedding in Pre-Silvernail Rocks. Bedding features in the pre-Silvernail sedimentary and volcanic rocks located south of the southeastern portion of the Silvernail "pluton" trend dominantly northerly with occasional variations to the northwest and northeast. Dips are generally moderate to gentle to the west but are locally steep to vertical. In the southeastern portion of the claim group easterly dips are evident in Permian phyllites. Bedding features in the greenstones west of the central and northerly portions of the Silvernail "pluton" (north of the dacite porphyry plug) generally strike east-northeast to west-northwest, and dips are generally moderate to the south.

3. Fracture and Fault zones. The U.S.G.S. has mapped northerly and northeasterly striking normal faults along contacts between Tertiary and pre-Tertiary rocks and along a contact between Tertiary dacite and conglomerate. Our mapping has not disclosed sufficient evidence to substantiate or refute the presence of these fault zones.

Two dominant fracture and/or fault trends, one northerly and the other northeasterly, are evident within the Silvernail intrusive. An irregular, northerly striking, westerly dipping zone of sericite schist represents the major northerly trending zone. This schist cuts the quartz diorite along the northerly trending contact of the southwestern portion of the Silvernail "pluton".

Other vertical or steeply dipping fracture or fault zones are indicated east of the major zone by straight narrow valleys. Northeasterly striking, generally northerly dipping fracture or fault zones manifest themselves in the central and northern portions of the Silvernail intrusive, chiefly as zones of sericite or chlorite schist. In many locations these schistose zones appear to represent sheared volcanic or sedimentary inclusions. Gently dipping (probably westerly) streaks of mafic minerals which are frequently evident in drill cores suggest that there has been movement along zones of weakness.

4. Breccia structures. The origin of the breccias (described under lithology) along the most southerly contact of the Silvernail "pluton" is not certain. The type containing Silvernail intrusive fragments in a greenstone matrix could possibly be explained by brecciation along fault zones following the contact between the intrusive and the greenstone. The type containing fragments of white quartzite and intrusive in a fine-grained green to black matrix could be better explained by either pipe-like or pebble dike-like breccia structures, as the quartzite fragments appear foreign to this area. Because of alluvial cover it is not possible to delineate the configuration of these latter type breccias at surface. Within the area of breccia outcrops, a circular ring of trees is evident. It is not certain whether this is a fortuitous drainage feature, or whether it might delineate a pipe.

A shattered zone on the Rohne and Chukar 5 claims (Butler group) in B. C. has been interpreted by a Canadian Geological Survey geologist as a shatter pipe. We cannot see sufficient evidence to support or to refute this interpretation.

5. Overall Structural Interpretation. The pre-Silvernail sedimentary and volcanic rocks appear to have been folded along northerly axes. The preponderance of gentle dips makes it appear that the overall folding has not been generally severe, but there are undoubtedly some tight folds as is evidenced by the occasional steep to vertical dips occurring in the southern part of the claim area. The age relationship between folding and intrusion of the Silvernail "pluton" is not certain.

The evidence available from drilling carried out to date suggests that the Silvernail intrusive complex might consist of a series of thick sills and/or dikes and a source plug, the location of which has not yet been discovered.

The pre-Silvernail and Silvernail rocks have been subjected to fracturing and/or faulting. Within the Silvernail intrusive the predominant strikes of these structures are northerly to northeasterly with dips chiefly to the west and northwest. Though there is no definitive evidence to prove this hypothesis, studies of drill cores correlated with local and regional geologic studies suggest the possibility that these numerous fracture or fault zones might be related to a major thrust or reverse fault zone.

Bedding and schistosity strikes appear to form a concentric pattern around the north and east flanks of the dacite porphyry plug located on the Kelsey claims, and dips of these features are inward toward the plug, suggesting the possibility that the plug might occupy a collapse structure.

It should be noted that the major portion of the copper-molybdenum mineralization occurring in the Kelsey prospect is associated with structural features.

C. Alteration

1. Extent of Altered Area. Though we have not made sufficiently detailed studies of the Kelsey prospect area to determine the true extent of the alteration associated with the copper/molybdenum mineralization, it can be stated at this time that alteration features are continuously apparent over an area roughly +2½ miles north-south (from the Hot Lake area in Washington to the Dividend-Lake View area in B. C.) by +1 mile east-west (from immediately east of the crest of Kruger Mt. to the outcrop edge where it abuts the Okanogan Valley alluvium.

2. Alteration in Pre-Silvernail Sedimentary and Volcanic Rocks. Where encountered in drill holes, the pre-Silvernail volcanic and sedimentary rocks sporadically appear to have undergone hornfelsic alteration. In addition, veins and irregular segregations of calcite are ubiquitious, and epidote often accompanies the calcite. Veinlets carrying quartz and calcite are common, and veinlets carrying quartz alone occur sporadically. These units have been altered to schist along fault zones, generally chlorite to sericite schist depending upon the original rock composition. The volcanic and sedimentary rocks appear to be similarly altered away from the localities drilled. Limestone beds (none of which have yet been intersected in drill holes) have been altered to skarn and marble.

3. Alteration in Rocks of the Silvernail "Pluton". The alteration minerals found in the Silvernail "pluton" are (by hand specimen identification) quartz, calcite, orthoclase, epidote, sericite and chlorite.

The quartz, calcite, orthoclase, and epidote occur in varying assemblages in veinlets and in irregular segregations; these often appear to be controlled by faults and fractures. The most common assemblage is calcite-quartz with or without epidote which occurs ubiquitously in all phases of the intrusive and in inclusions. Veinlets and segregations of quartz occur sporadically in all rock types of the "pluton" but are most prevalent in the quartz diorite. Calcite and calcite-epidote veinlets and segregations are found chiefly in the diorite and in greenstone inclusions. Orthoclase occurs by itself and with the other minerals chiefly in the quartz diorite, while epidote by itself occurs chiefly in the diorite. The more intensely altered portions of the "pluton" are characterized by veinlets and flooded zones which contain combinations of quartz, calcite, orthoclase and epidote together. Some portions of holes K-1 and K-2 contain fine-grained, buff to gray bands and flooded zones, the mineralogy of which cannot be readily identified in hand specimen; these appear to be composed of quartz-feldspar, and may be aplitic dikes.

Chlorite occurs chiefly after mafic minerals and, together with sericite, is most commonly observed in thin fractures and faults, along which mafic minerals appear to have been remobilized. Sericite and chlorite schists, which are probably the result of alteration along strong fault and fracture zones, occur throughout the intrusive complex. Gneissic textures locally developed adjacent to schistose zones are probably of similar origin to the schist. The schist appears characteristic of fracture or shear zones whereas the gneiss probably represents zones of stress adjacent to the broken zones.

4. Alteration In Other Intrusive Rocks Possibly related to the Silvermail "Pluton". The granodiorite outcropping on the northerly portion of the Butler claims in B. C. is characterized by euhedral crystal grains and appears generally unaltered as compared to the Silvermail rocks.

5. Alteration In Post-Silvermail (Tertiary) Rocks. There is no obvious evidence of hydrothermal alteration in the Eocene hornblende dacite porphyry plugs or in the Eocene conglomerate. Though it cannot be demonstrated in hand specimen, the Locate diatreme intrusive rocks do show some signs of alteration; they are often characterized by poorly formed mineral grain textures, and epidote is often present.

D. Mineralization

1. Extent of Mineralization and Mineralogical Pattern. The Kelsey prospect contains extensive chalcopyrite showings with frequently associated molybdenite and occasional weak silver-gold values over an area +2½ miles north-south by +1 mile east-west, roughtly coincident with the area of alteration described above. Occurrences of bornite have been reported in drill samples from the Butler claims (Chukar 5 and Rohne) in B. C. but have not been corroborated by our examination. Iron in the form of pyrite, pyrrhotite (?), magnetite, and hematite generally is associated with the chalcopyrite.

At the northern margin of the "copper" zone gold has been mined from replacement deposits in limestone. Tungsten values have been reported from veins within the "copper" zone, and magnesite occurs along its southern margin. Oxidation is very shallow and only weak oxide copper and limonite staining have been developed. The "copper" zone abuts post-mineral cover on its eastern and southeastern margins.

Small showings of pyrite, gold (?), and argentiferous galena occur for several miles to the west and southwest of the perimeter of the "copper" zone. Although copper is associated with some of these showings, it is of very low grade, and the size of the deposits is too small to be of possible economic significance.

2. Past Production. The only significant production derived from the Halsey Prospect area has been gold-ore from the Dividend-Lakeview claims. We do not have access to accurate production records, but an educated guess would place past production in the range of 100,000 to 200,000 tons averaging less than 0.5 oz. gold; it is doubtful that the low copper values associated with the gold ore were recovered.

Small-scale attempts have been made to mine some of the high grade veins within the "copper" area, but it is doubtful that this work has resulted in shipment of more than a wagon load or two of ore.

3. Mineralization In Pre-Silvernail Volcanic and Sedimentary Rocks. Volcanic and sedimentary rocks included within the Silvernail "pluton" and along contacts with the intrusive have been mineralized with chalcopyrite, pyrite, pyrrhotite (?), magnetite, hematite, and molybdenite. The most common mode of occurrence is in veinlets dominantly comprised of chalcopyrite and pyrite accompanied by various combinations of quartz, calcite, and epidote. In schistose zones fine chalcopyrite is often disseminated along schistosity planes. Molybdenite occurs in quartz veinlets, quartz-calcite veinlets, and most often as paint along schistosity and bedding planes. In drill hole K-6, the only hole thus far drilled outside of the Silvernail "pluton", there is a notable association of chalcopyrite with magnetite-hematite veinlets in the upper 150 feet.

The volcanics west of the Silvernail intrusive are limonite-stained at surface, chiefly after disseminated pyrite. Extensive areas in the volcanics to the south and southwest of the intrusive exhibit limonite staining and pyrite mineralization with sporadic oxide copper and chalcopyrite. Numerous small massive metal deposits containing varying combinations of pyrite, pyrrhotite, chalcopyrite, and magnetite outcrop in greenstones and in sedimentary rocks south and southwest of the "pluton". The most southerly of these occurrences, 3/4 mile from the southerly contact of the intrusive, is located close to pockets of magnesite which are probably localized in the same stratigraphic unit as

the massive metal pods. The massive metal deposits appear to have been localized along fault zones and in certain favorable (chiefly calcareous) horizons which have been altered to skarn and marble.

The gold deposits of the Dividend Lakeview claim groups in B. C. occur in irregular pockets replacing calcareous beds. The gold is associated with pyrite, pyrrhotite, magnetite, chalcopyrite, and arsenopyrite. A small contact metasomatic copper deposit occurs in this area on the Mann claim.

4. Mineralization In Silvermail Intrusive Rocks. Variable amounts of chalcopyrite and oxide copper minerals are ubiquitous in surface outcrops from the south contact of the intrusive almost to the international boundary. Along the boundary and in B. C., although extensive areas of copper mineralization occur within the "pluton", large intervening areas are relatively barren.

A large percentage of the mineralization in the intrusive rocks consists of chalcopyrite with or without pyrite in thin veinlets and bands (generally less than 1" thick) associated with veinlets and bands of alteration minerals. Other common modes of occurrence for the chalcopyrite and pyrite are as very thin veinlets after elongate streaks of mafic minerals, as disseminations along schistosity planes, and as disseminations generally after individual mafic grains. Veinlets of hematite (?) with or without chalcopyrite have been observed at depth in several holes. Molybdenite occurs with or without chalcopyrite in quartz veinlets, quartz-calcite veinlets, orthoclase veinlets, and occasionally along schistosity planes.

In the areas drilled to date, the rocks in the mineralized portions of the Silvermail "pluton" are estimated to carry an average of less than 1% to 3% sulfides by volume, the majority of the sulfides occurring in gently dipping veinlets. The copper to iron ratio has been generally favorable (1 to 1 or higher), but there is some suggestion in several holes of an increase of iron in relation to copper at depth. Molybdenite occurs sporadically and has thus far been most prevalent in the more westerly holes drilled. Based on both drill core logging and assay values, there is strong evidence to suggest that mineralization has been significantly influenced by fault and fracture zones dipping generally less than 45° (probably predominantly to the west as is evidenced by structures mapped at surface). High grade massive chalcopyrite occurs sporadically within the "pluton" in quartz and quartz-calcite veins which are usually localized in schistose zones, and as replacement zones in volcanic inclusions.

5. Mineralization In Other Intrusive Rocks Possibly Related to the Silvermail "Pluton". The granodiorite outcropping on the northerly portion of the Butler claims in B. C. is not pervasively mineralized. It does, however, contain oxide copper and chalcopyrite along widely-spaced, narrow, generally steeply dipping, shear zones, and at one locality on the Gem claim is traversed by a narrow, steeply dipping aplitic dike carrying disseminated chalcopyrite and molybdenite.

6. Mineralization In Post-Silvermail (Tertiary) Rocks. No mineralization has been observed in the Locene hornblende dacite porphyry plugs on the Kelsey Prospect and southeast of it, or in the granite conglomerate.

Minor isolated oxide copper showings along fractures and in breccia fragments are evident in portions of the Oroville diatreme mapped as malignite breccia by the U.S.G.S. Minor showings of limonite and pyrite were also observed in greenstone breccia rocks of the Shankers Bend diatreme.

IV. EXPLORATION SUMMARY

A. Pre-St. Joe Exploration

1. Work Completed Prior to Canadian Superior's Efforts. In addition to mining operations at the Dividend-Lakeview properties in B. C. and attempts at development of small high grade copper prospects on the U. S. portion of the project area, most of the exploration activity prior to that conducted by Canadian Superior consisted of surface trenching and shallow drilling (less than 200 feet depth) to test near surface copper grade. A shallow penetration (200 vertical feet) pulse-type I. P. survey was carried out over the Butler and Simpson (located adjacent to Butler's) claims in B. C. either prior to or contemporaneous with the Canadian Superior work. The pre-Canadian Superior work known to us is as follows: development incline on Golden Chariot vein (McClure property) by W. Thomas; exploration, development and mining of Dividend-Lakeview ore bodies by Granby, Dividend-Lakeview Consolidated Gold Mining Co., and others; development tunnel on OK Copper vein (U.S.) by unknown party; trenching and shallow drilling on Kelsey property (U.S.) by W. G. Hallauer and Inland Copper; I. P. and shallow drilling on Butler and Simpson claims (B.C.) by Torbrit Silver Mines Ltd.; trenching and shallow drilling on Butler claims (B. C.) by Granby.

Aside from the mining operations on the Dividend-Lakeview properties which might have been profitable, all other development was fruitless. Sampling of the Kelsey (U.S.) property by Hellauer and Inland revealed the possibility of commercial low grade copper mineralization. The I. P. work carried out by Huntec Ltd. on behalf of Torbrit Silver Mines Ltd. appears to have been poorly executed and to be of little value. One of the angle holes drilled by Torbrit, which was reportedly collared near the edge of a cliff, was drilled outward and bottomed in thin air. Shallow drilling by Granby on the Butler claims (B.C.) ("shatter pipe" area) intersected sporadic thin intervals of economic grade copper at shallow depths, but the overall thicknesses drilled were uneconomic.

2. Canadian Superior Work. Canadian Superior Exploration Ltd. has reported expenditures of $80,000.00 (Canadian) on the Kelsey property (U.S.). This work consisted of geologic mapping, geochemical soil sampling, a moderate depth penetration pulse-type I. P. survey and a ground magnetic survey which mainly cover the Silvernail "pluton", 6 rotary holes totaling 1867 feet (the deepest hole to 435'), and 25 percussion holes totaling 7790' (the deepest to 420').

The geological mapping and geochemical work indicated relatively strong copper showings in the east-central portion of the intrusive, and the I. P. survey detected a roughly coincident, strong chargeability anomaly. The magnetic survey showed generally flat (low) conditions over the Silvernail "pluton", but one high of +15000 gammas relief (which is open on its south end) was detected south of the south contact of the "pluton". The drilling, which was designed to test the well mineralized area apparent at surface (roughly 4200 ft. by 2000 ft.) to moderate depth, indicated the presence of widespread copper in excess of 0.2% and sporadic areas containing in excess of 0.3% Cu. The presence of widespread but low grade and erratic molybdenum was also found.

It should be noted that several of the Canadian Superior rotary holes (R-1, 2, and 3) drilled in the strongest portion of their I. P. anomaly reportedly intersected only very minor sulfide; it is possible that this very strong anomaly might be exaggerated by the fence and aqueduct located along its eastern margin. The percussion holes reportedly encountered high pressure water, and they were drilled under severe winter conditions; it is possible that some of the sulfides and associated copper values in some of these holes might have been washed away. Evidence in favor of this is indicated by a comparison of the assays in P-8 and P-8A with St. Joe hole K-1 located immediately adjacent to them, the general lack of +1.0% Cu assays in the percussion holes as compared to the presence of such high assays in the core holes, and the general knowledge that it is difficult to obtain accurate samples from percussion or rotary holes with heavy water return. On the basis of the information available, however, there is no way to reliably determine whether assays derived from these percussion holes are consistently on the low side.

B. St. Joe Exploration

1. Review of Past Efforts. Initial investigations of the Kelsey Prospect by PNR indicated a widespread surface copper anomaly with sporadic associated molybdenum values within a zone of propylitic alteration localized in what appeared to be a quartz diorite stock. The "stock" and its contact zones appeared to offer a favorable target, especially for the possibility of stronger copper/molybdenum mineralization at depth associated with hypothesized more favorable alteration facies.

   Review of the Canadian Superior data revealed much stronger near surface copper/molybdenum values than we would have expected from an examination of surface outcrops, several of the holes indicating substantial +0.3% Cu intersections and one bottoming in +0.5% Cu.

   Examination of the property and review of the previous work made it evident that deeper drilling was warranted in the area tested by Canadian Superior, and that other portions of the prospect not tested by Canadian Superior should also be drilled.

2. Expenditures. From May, 1970, through January, 1971, St. Joe has expended slightly in excess of $100,000.00 on the Kelsey Prospect area.

3. Land Acquisition. A preliminary land study indicated that the Canadian Superior-Inland land holdings were somewhat precarious in that several of the more critical claims located by Inland were inadvertently staked on patented ground (drilling had been carried out on this patented ground without permission of owners), and large portions of the mineralized area and adjacent lands were either held by other parties or were open to location.

   Prior to initiation of work, St. Joe optioned the patented lots on which the four non-valid Inland claims had been located (Oregon, Idaho, Montana, Nevada). During the period that exploration work was being carried out, other lands were gradually acquired as outlined in this report under "Property Considerations".

4. Geological, Geochemical, and Geophysical Work. A reconnaissance geological map was prepared covering the Kelsey Prospect (U.S.) and adjoining properties in B. C. A reconnaissance rock chip geochemical study was made of the area in an attempt to determine whether a meaningful copper/molybdenum dispersion pattern might exist.

   Although some I. P. work had been undertaken by others in the past, an I. P. survey was carried out over the Kelsey Prospect and immediately adjacent areas in the U. S. and in B. C. Analyses of the previous I. P. work done in B. C. revealed it to be inadequate for our purposes due to very short electrode separations and its generally poor quality. Though the Superior I. P. survey appeared to be of good quality, it seemed advisable to cover a larger area and to employ wider electrode spreads in an effort to achieve better depth penetration.

A ground magnetic survey has just been initiated, mainly to extend (especially to the south) the previous Canadian Superior coverage.

5. Drilling. Seven core holes totaling 5980 feet were drilled. Two of these holes (K-1 and K-2) were designed to test areas at depth in which Canadian Superior had encountered good mineralization, and the other five tested other portions of the property not previously drilled. Three of these latter holes were based upon results of the I. P. survey. The drilling to date has been widely and irregularly spaced in order to obtain information from different portions of the property and to test various surface geological features.

6. St. Joe Exploration Results.

a. Geological Mapping; Geochemical Survey. Geological mapping provided a rough lithologic and structural picture of the Kelsey Project area. It is doubtful, however, that even detailed surface mapping would have given any reliable clues as to the configuration of the Silvernail intrusive at depth. Visual outcrop examination and the rock chip geochemical results generally appear to be very poor indicators of the copper/molybdenum grades that might be expected at depth. This is probably due in a large part to the apparently layered nature of the mineralized zones.

b. Geophysical Work

I. P. Survey - The results of the I. P. survey are discussed in detail in the McPhar report forwarded under separate cover. In general, the Silvernail "pluton" and pre-Silvernail rocks south of the international border are characterized by large areas of moderately strong PFE's within which are more limited areas of strong PFE response. The Silvernail and pre-Silvernail rocks north of the international boundary are characterized by large areas exhibiting weak to very weak PFE's within which are smaller moderately strong PFE anomalies. It is interesting to note that one line (B. C. line 7) run over a portion of the granodiorite stock (?) north of the Silvernail intrusive exhibited a very weak and questionable PFE anomaly over a small showing of disseminated chalcopyrite-molybdenite, but it was otherwise not anomalous. Portions of I. P. lines both on the Washington and B. C. sides of the boundary, run over areas east of the "pluton" which are covered by post mineral bedrock or alluvium were generally not anomalous.

Resistivities are variable within the PFE anomalies and do not appear to form any discernable pattern. Resistivity readings on portions of lines run over alluvium in the valley east of the prospect indicate a sharp bedrock-alluvium contact suggesting the probability of deep alluvial valley fill.

Magnetic Survey. The ground magnetic survey has just been initiated, and no results are available as yet.

c. Drill Hole Results. The seven St. Joe holes, which tested an area over 7000 feet long (northwest-southeast), all encountered anomalous copper and/or molybdenum. Five of the holes (K-1, 2, 3, 6 and 7) intersected significant mineralized sections. In summary, the more significant intersections encountered by St. Joe drilling are as follows:

Drill Hole	Interval	Thickness/Avg. Grade
K-1	9'-245'	236'/.344% Cu
	9'-615'	606'/.282% Cu
K-2	105'-170'	65'/.707% Cu
	530'-551'	21'/1.521% Cu
	105-551'	446'/.348% Cu, .004% Mo
K-3	10'-90'	80'/.407% Cu, .013% Mo
	430'-442'	12'/2.192% Cu, .032% Mo
K-6	30'-130'	100'/.366% Cu, .007% Mo
K-7	160'-260'	100'/.257% Cu, .009% Mo
	530'-590'	60'/.456% Cu, .007% Mo

Whinnen Drilling Co., contractor for holes K-1 through K-4, encountered persistent difficulties with core barrels resulting in erratic core recovery; recoveries were especially poor in some of the better mineralized sections (see accompanying drill logs). This has probably had a negative effect on the average copper grades obtained from these sections. E. J. Longyear, contractor for holes K-5 through K-7, obtained generally excellent core recovery, and copper grades from these holes can be considered reliable. Because a large percentage of the molybdenite encountered occurs as paint along fracture, bedding, and schistosity planes, it is very probable that some of this molybdenite has been lost as sludge. The molybdenum assays, therefore, are probably generally on the low side, even where core recovery was good.

d. Comparison of I. P. Survey Results and Drill Hole Information. Because of numerous variables (e.g., ratio of pyrite to chalcopyrite, etc.) which influence I. P. results or their interpretation, it is extremely difficult to determine minimum threshhold values required to justify drill site selection. Several of the better holes drilled by St. Joe to date have been located in areas which apparently are at least partially underlain by

PFE's in excess of 3.0, but this has not always been the case; good mineralization has also been found in areas of lower PFE response. Resistivity values range from low to high in the areas of better mineralization, and no area of high PFE response can therefore be ruled out at this point on the basis of resistivity readings.

Based on our present knowledge with respect to the I. P. data, we are inclined to recommend areas which give PFE response in excess of 3.0 as possible future drill sites unless, however, favorable geological factors indicate justification for testing areas characterized by lower PFE's.

VI. MISCELLANEOUS CONSIDERATIONS

Should the possibility of finding a presently mineable ore reserve be eliminated as the result of our efforts, the potential for a reserve of 0.3 to 0.4% copper should be considered; initial indications are that a substantial, near-surface tonnage of mineralization in this grade range might occur on the Kelsey. This possible reserve is fairly well situated for mining purposes. If projections of future copper prices are reasonably attractive, a large tonnage of low grade copper might be worth retaining if the holding costs are not prohibitive. A delay of several years with respect to initiating possible development would also permit resolution of some of the issues created by the present ecological craze and, if required, would also allow adjacent orchard land to be purchased without urgency over a period of years on a relatively reasonable basis.

The possibility of leaching a large mass of low grade material, either in place or by heap methods, should also be reviewed. Although an undetermined amount of carbonate is associated with the mineralization, and though sulfides cannot be easily leached at present, advances in technology may make such a situation economically feasible in the near future. It should be noted that one benefit of the current antipollution drive will be the large, low-priced supplies of sulfuric acid which will result; e.g. two-thirds of the [illegible] acid currently being produced by the clean-up in the Coeur d' Alene mining district is at present without a market.

Holding costs to June 4, 1973 involve only nominal monthly payments to the various property owners, as indicated by the tables included with this report; this should provide sufficient time to complete the necessary exploration work. It is not yet possible to determine the toal costs which would be required to hold the Kelsey properties for approximately a ten year period because of uncertainties with respect to the $100,000 payment due under the Hallauer-Inland Agreement and the advisability of purchasing the Butler property. Property payments and required work commitments and exploration costs, however, should not exceed one cent per ton for a 100 million ton reserve. A larger reserve would reduce this figure; additional property acquisition would increase it.

Exploration, property, and holding costs cited in this report represent total costs. In the event Canadian Superior elects to participate, St. Joe will be responsible for only 4/7 to 5/8 of these totals. If in the event Canadian Superior elects not to participate, it may be possible for St. Jos to interest another party in joining in the exploration at the Kelsey; the situation has already become so complex, however, that bringing another party into this project is probably not advisable.

It should be noted that much ground exists near and adjacent to the Kelsey properties which is covered by post-mineralization volcanic, or alluvial material and must be considered potentially favorable. Some thought should be given to the evaluation of these lands, especially if significant encouragement is forthcoming as a result of our exploration efforts.

VII. CONCLUSIONS AND POTENTIAL

Within the property limits of the Kelsey project a large area (+2½ miles by +1 mile) has been hydrothermally altered and mineralized with copper and molybdenum. This altered and mineralized area is bounded by post-mineralization rocks (probably thick) on its southeastern and southwestern margins, and by alluvium (probably deep) on its eastern margin.

Copper/molybdenum mineralization is probably related to the Silvernail "pluton" which, based on drilling to date, appears to be comprised mainly of layers of intrusive rock intermixed with lesser amounts of volcanic and sedimentary rock. This "pluton" probably consists of a complex series of sills and/or dikes rather than being a simple stock as it appears at surface. It is very likely, though that a source plug exists somewhere within or adjacent to the intrusive complex.

Pervasive mineralization occurs chiefly in the form of chalcopyrite and chalcopyrite-pyrite veinlets associated with a propylitic alteration mineral assemblage both in Silvernail intrusive rocks (quartz diorite and diorite) and in intruded volcanics and sediments. The pervasive veinlet zones are probably strongly influenced by structure and might represent healed thrust or reverse fault zones.

South of the surface outcrop of the Silvernail "pluton" small massive metal deposits (pyrite-pyrrhotite-chalcopyrite-magnetite) occur along fault zones in the volcanics, and along fault zones and favorable beds in the sedimentary rocks.

Drilling to date has resulted in the intersection of several significant intervals of +.40% copper at shallow to moderate depths in widely spaced drill holes (K-2, 105'-170', average .707% Cu; K-3, 10'-90', average .407% Cu and .013% Mo; K-7, 530'-590', average .456% Cu and .007% Mo). In addition, this drilling indicates a strong probability that large tonnages of .30% to .40% copper might exist at shallow to moderate depths (K-1, 19'-245', average .344% Cu; K-2, 105'-551', average .348% Cu and .004% Mo; K-6, 30'-130', average .360% Cu and .007' Mo.)

The induced polarization survey indicates that much of the altered and mineralized zone is moderately anomalous and that smaller areas are strongly anomalous. Drill holes penetrating areas apparently underlain by moderately strong PFE anomalies have shown significant intersections of copper +.40% to .707% over 60' to 90' thicknesses.

Previous magnetic work indicated a +15,000 gamma relief high (still open to the south) in the area south of the Silvernail "pluton" where massive metal occurrences outcrop. Drill hole K-6, the only hole drilled south of the Silvernail intrusive, contained significant chalcopyrite-molybdenite associated with magnetite in its upper 150 feet. — See enclosed mag map.

Though a considerable amount of drilling has been undertaken on the Kelsey Prospect area, it is evident that large potentially favorable areas remain undrilled even to shallow depths and that no deep testing has as yet been attempted. Although drilling to date has not encountered any substantial intervals of currently economic ore grade (+.50% Cu), there is a reasonable chance that a substantial bulk low grade deposit of presently economic copper/molybdenum might exist at shallow to moderate depth within the large untested portions of the altered-mineralized zone, at depth under the altered-mineralized zone, or under adjacent post-mineralization cover. In addition to bulk low grade potential, it is possible that contact or replacement-type copper deposits of good grade might occur around the contacts of the mineralized intrusive.

The drilling completed to date indicates the strong probability that substantial tonnages of .30% Cu to .40% Cu might exist at shallow to moderate depths (open pit range) within and adjacent to the areas already drilled and possibly on other portions of the property. While a deposit in this grade range would not be mineable under current economic conditions, there is a very good chance that such a deposit might be of economic value in the near future.

As a number of favorable geological and geophysical targets are clearly present, the possible occurrence of a large, currently economic, bulk low grade copper/molybdenum deposit or the presence of significant contact and/or replacement deposits cannot be ruled out until these targets are tested by drilling. Such additional drilling certainly appears to be justified.

VIII. RECOMMENDATIONS

A twofold approach to further exploration of the Kelsey property is recommended. First, untested favorable areas on the prospect should be drilled to evaluate the possibility of a large deposit of ore grade (under current economic conditions). It is estimated that six holes would be required to accomplish this program at a total cost of $63,503.00

If the initial program is unsuccessful in locating any encouraging indications of economic mineralization, consideration should be given to evaluating the property for its sub-0.1% Cu potential; should a large open pit reserve in this grade range be delineated, and if other factors related to its minability appear to be reasonably favorable, it very possibly might be advisable to retain the property as a future copper source. The six holes drilled in the initial phase of the program would aid in judging whether this second phase program would be warranted.

A. First Phase Program (Testing undrilled, anomalous areas for an ore-grade deposit)

Based upon favorable geology and geophysical data, the following drill sites are proposed:

1.) U. S.-I.P. line 5, approximately 1250' west, to test moderate strength PFE anomaly in this area. Minimum depth should be 600 feet.

2.) U. S.-I.P. line 9, either 750' east or 500' west (depending upon the relative feasibility of building a road), to test moderate strength PFE anomaly which occurs in areas of possible breccia pipes or strong anomaly in areas underlain by greenstones. Minimum depth should be 500 feet.

3.) U. S.-I.P. line 11, approximately 1250' west (actual location dependent upon topographic accessibility), to test very strong PFE anomaly with associated resistivity low in this area which at surface contains small massive metal deposits in sedimentary rocks. Minimum depth should be 750 feet.

4.) U. S.-I.P. line 2, 6500-7000' west, to test strong PFE anomaly in this portion of the contact zone. Minimum depth should be 600 feet.

5.) D.C. -vicinity of intersection of lines 2 and 8, the final location dependent on possible acquisition of Simpson property, to test moderate strength PFE anomaly in this area which at surface contains strong oxide copper showings in a shattered zone. Minimum depth should be 500 feet.

6.) Location not certain. A sixth hole to 1000 feet should be budgeted for in the event that favorable ground magnetic survey results indicate the need for an additional drill hole, or if one of the other holes merits offsetting. This hole would not be drilled unless warranted.

A cost estimate for this recommended first phase drilling program is as follows:

Necessary Land Payments to hold ground for 4 months from initiation of drilling	$ 2,250.00
Drill site construction and Road Building	6,500.00
Drilling (3950 feet) est. $10/ft (this includes one 1000 foot hole - location uncertain) which might not be drilled	39,500.00
Assays	2,500.00
Salary, one Senior Geologist 20 days @ $83/day	1,660.00
Salary, one Junior Geologist 2 months @ $800/mo.	1,600.00
Travel:	
Vehicle 1 - 5,000 miles @ 17¢/mile	850.00
Vehicle 2 - 3,000 miles @ 17¢/mile	510.00
Living Expenses:	
Senior Geologist 20 days @ $17/day	340.00
Junior Geologist 60 days @ $17/day	1,020.00
Miscellaneous (Supplies, freight, core storage, taxes, insurance, etc.)	1,000.00
Subtotal	$ 57,730.00
Contingencies (based on 10% of above costs)	5,773.00
Total	$ 63,503.00

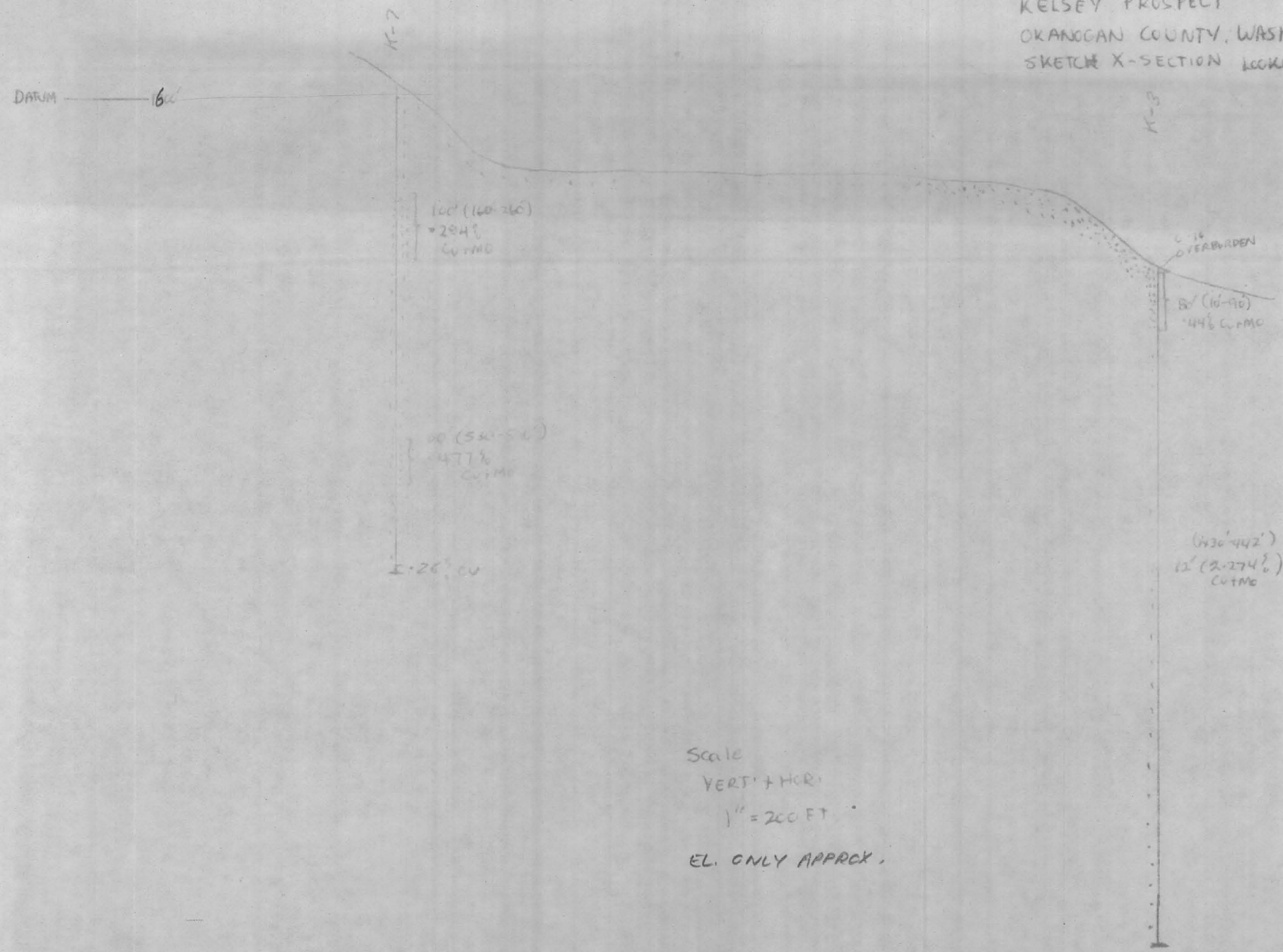
If any of the holes are particularly encouraging at depth, deeper drilling might be recommended, and supplemental funds might be requested.

B. Second Phase Program (offset drilling to delineate a low grade deposit of possible future value).

A decision as to whether or not to undertake this second phase must await the results of the first phase program, and no cost estimate will therefore be presented at this time. If a substantial low grade deposit worth retaining for future use could be delineated, because the overall holding costs (previously discussed) are not excessive, an annual low cost drilling program sufficient to keep the claims in good standing could be employed to methodically test the ground.

M. A. Kaufman
James A. Knox
PERRY, KNOX, KAUFMAN, INC.

KELSEY PROSPECT
OKANOGAN COUNTY, WASH.
SKETCH X-SECTION LOOKING N



Scale
VERT + HOR.
1" = 200 FT

EL. ONLY APPROX.

KELSEY PROJECT AREA, OKANOGAN COUNTY, WASH. AND OSOYOOS MINING DIVISION, B.C.

PRELIMINARY RECONN. GEOLOGIC MAP (BASE: U.S.D.A. AERIAL PHOTO 8CC-90)

(NOTE: SCALE ONLY APPROXIMATE AND VARIABLE DUE TO PHOTO DISTORTION)

POST MINERAL ROCKS

- qal — ALLUVIUM
- UNDIFF. TERTIARY SEDIMENTS
- CGL — TERTIARY GRANITE CONGLOMERATE
- TERTIARY (INTRUSIVE) VOLCANICS, CHIEFLY ~~LATHE~~ DACITE PORPHYRY

MASSIVE METAL OCCURRENCE

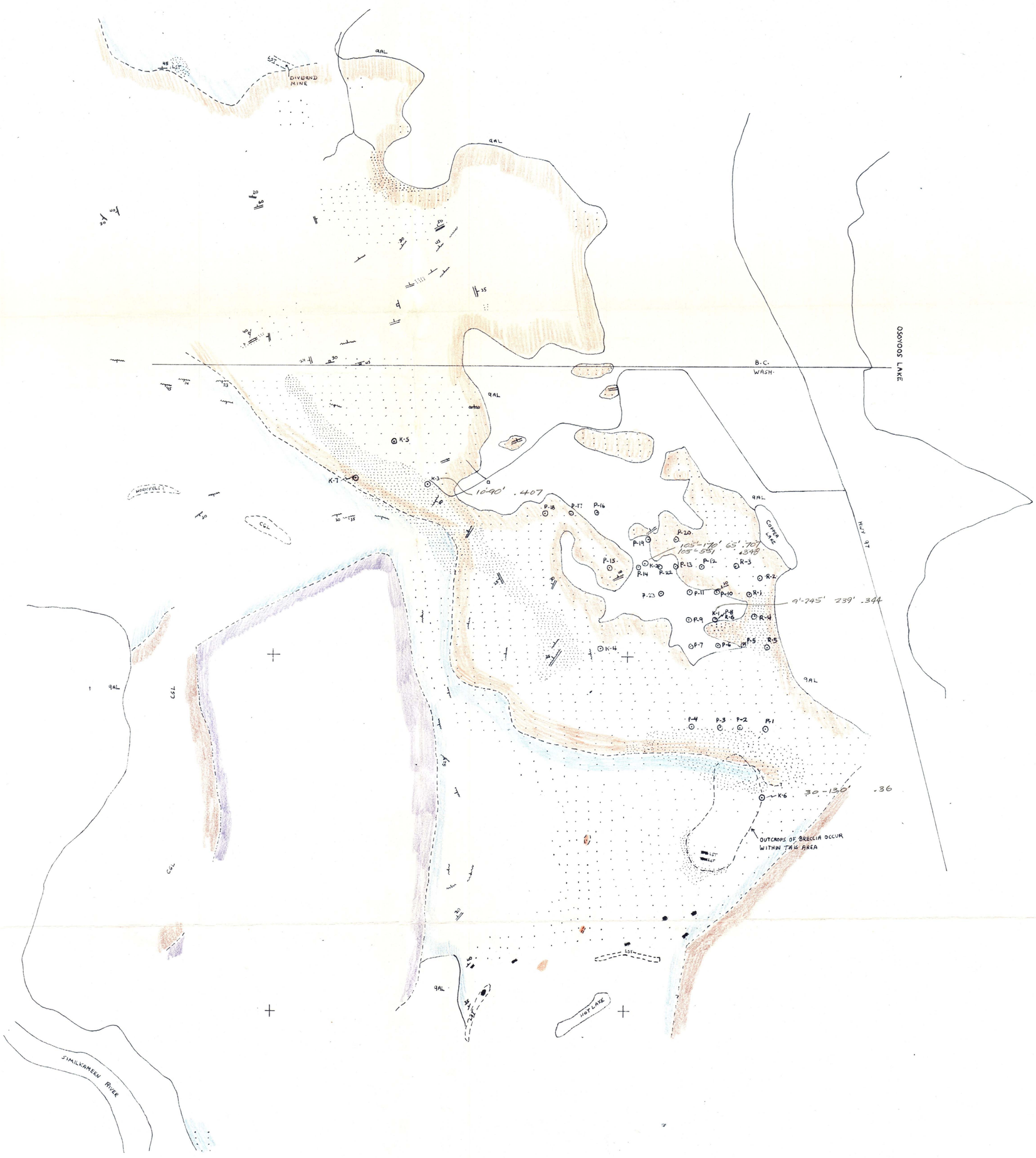
- EASILY VISIBLE OXIDE CU AND/OR CHALCOPYRITE AT SURFACE
- VERY WEAK OXIDE CU AND/OR CHALCOPYRITE AT SURFACE (WITH SMALL STRONGER SHOWINGS)
- STRONG QUARTZ - CALCITE MINERALIZED ZONES CONTROLLED BY SCHISTOSITY OR SHEARING
- STRONG QUARTZ - CALCITE MINERALIZED ZONES CONTROLLED BY FRACTURES
- GRANODIORITE TO DIORITE INTRUSIVE, PROBABLY GENERALLY WITH INCLUDED SEDIMENTARY AND/OR VOLCANIC ROCK (SILVERNAIL PLUTON)
- ~~INTRUSIVE AS ABOVE WITH OBVIOUSLY ABUNDANT INCLUDED SEDIMENTARY AND VOLCANIC ROCK~~
- UNDIFF. MESOZOIC GREENSTONES (VOLCANICS) AND SEDIMENTS, AND PALEOZOIC (ANARCHIST) SEDIMENTS
- LST — LIMESTONE (PERMIAN)? CHIEFLY ALTERED TO SKARN, HORNFELS, AND MARBLE
- SCHISTOSITY OR SHEARING
- FRACTURE
- K-1 — ST. JOE DRILL SITE (CORE)
- P-1, R-1 — SUPERIOR DRILL SITE P (PERCUSSION) R (ROTARY)

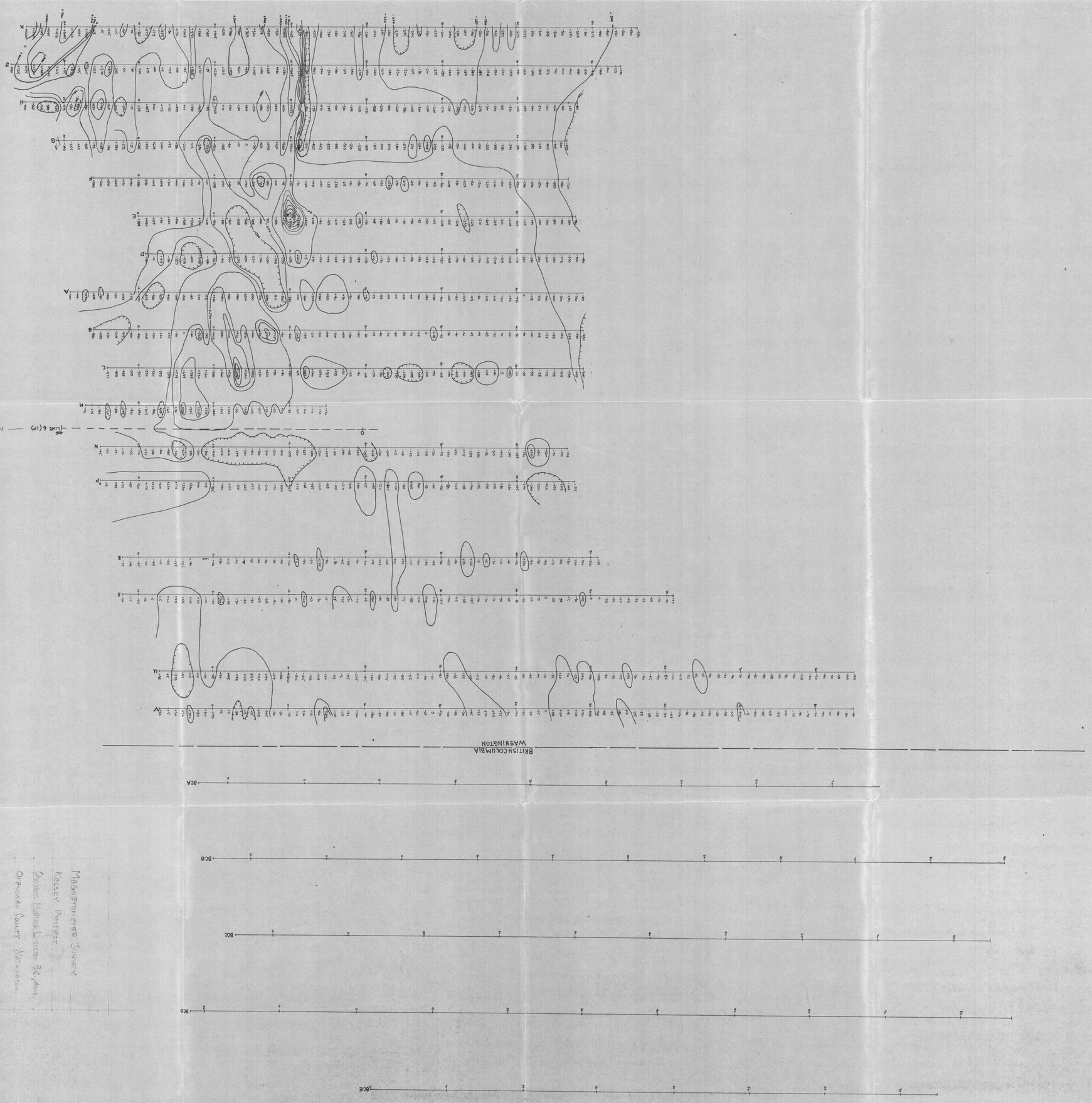
0 — 1000 FT. APPROX. SCALE

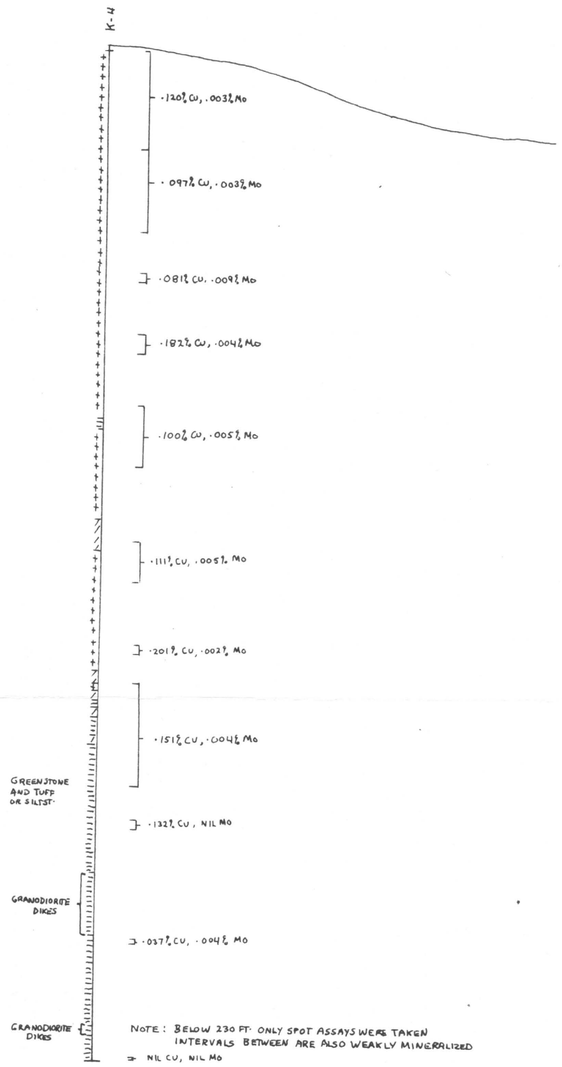
N

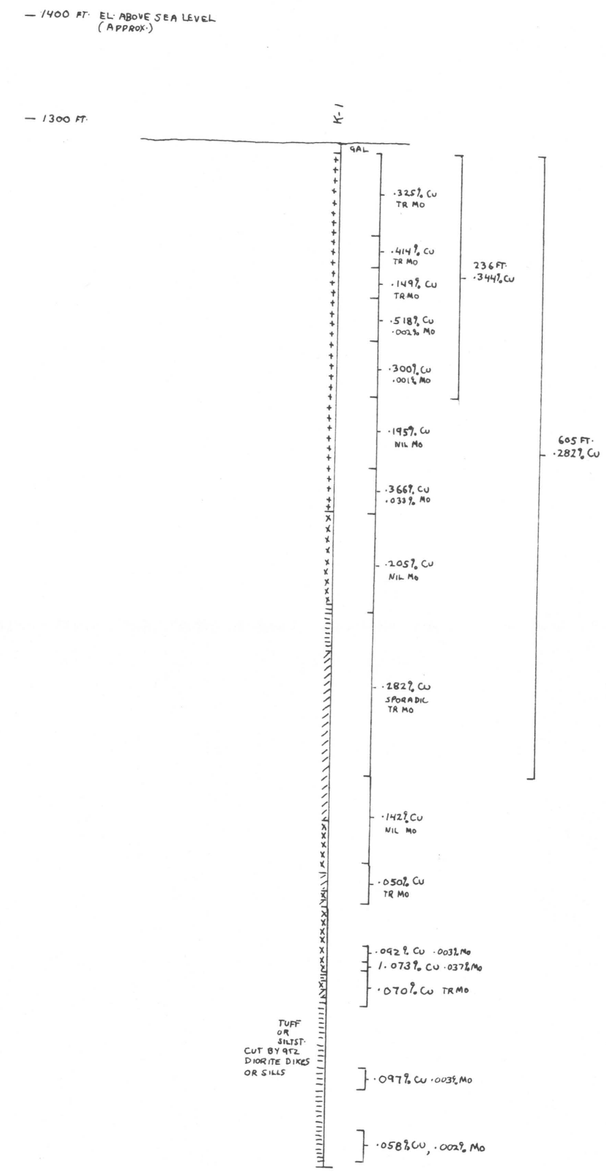
MAPPING BY JAMES STEWART, SUGGESTIONS BY M. KAUFMAN

GEOLOGY IN S.E. PORTION OF AREA AFTER U.S.G.S. BULL. 1272-B




BRITISH COLUMBIA
WASHINGTON
N
FEETIM
1" = 50FT.
CONTOUR INT
+ ZERO = 500 γ
— ZERO = 250 γ
MATCH LINE W/ IP MAP
MAGNETOMETER SURVEY
KELSEY PROSPECT
OKANOGAN COUNTY, WASHINGTON
PEACHY LAKE, KAISERMAN INC.
SCALE 1"=50'





KELSEY PROJECT, WASHINGTON
CROSS SECTION LOOKING NNW
SCALE VERT. AND HOR. 1" = 100 FT.

ELEVATIONS AND DISTANCES ONLY APPROXIMATE, ELEVATIONS ADAPTED FROM U.S.G.S. TOPO MAP, NOT SURVEYED

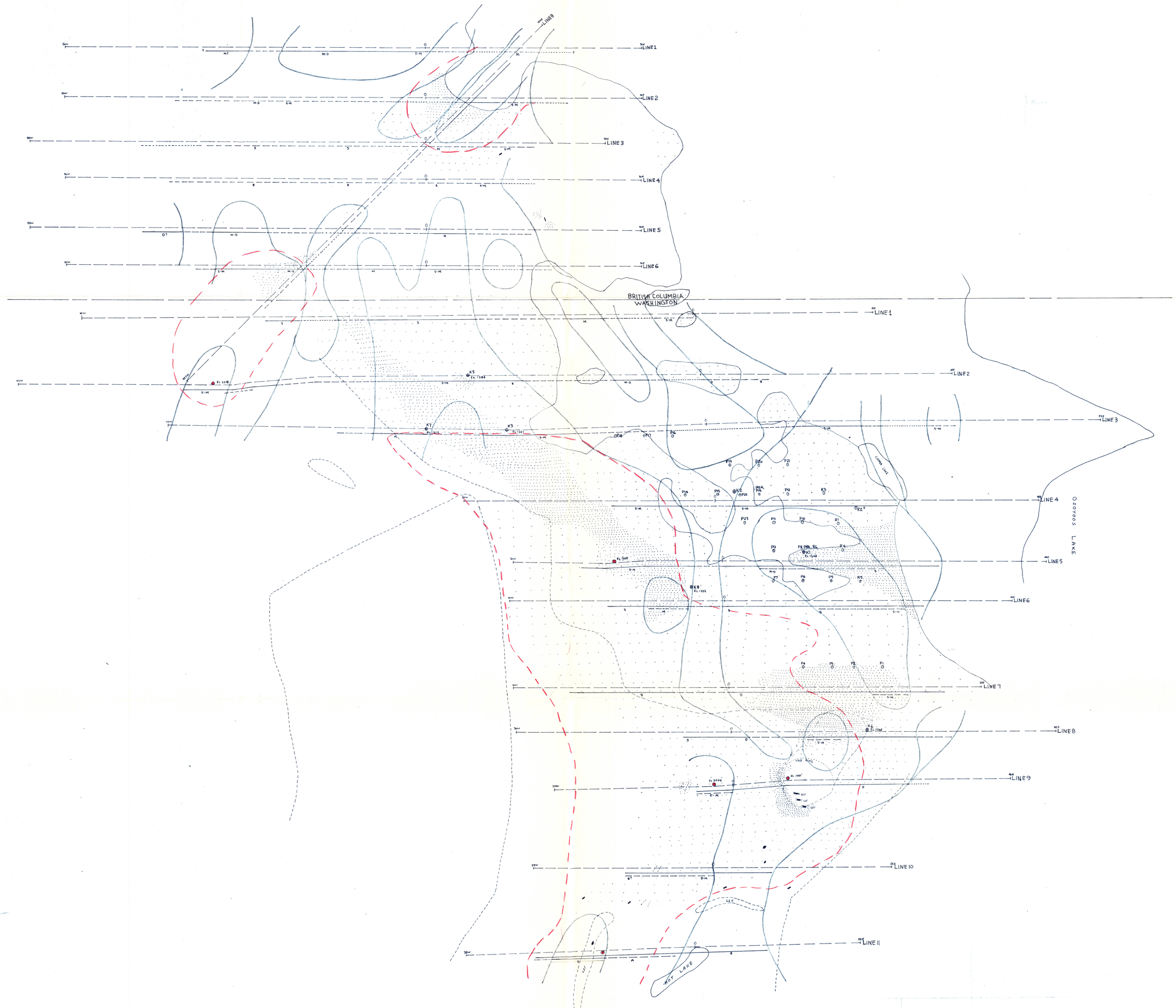
GRANODIORITE, QTZ DIORITE, OR QTZ MONZONITE, IN PLACES PORPHYRITIC

DIORITE

INTRUSIVE (AS ABOVE) WITH FREQUENT INCLUSIONS OF SED. OR VOLCANIC ROCK

CHIEFLY CHLORITE SCHIST, SERICITE SCHIST, GREENSTONE, OR TUFF? OR SILTSTONE?

PERRY, KNOX, KAUFMAN, INC.
FEB. 1971



PRELIM

1" = 500 FT

I.P. SURVEY BY McPHAR

PFE ANOMALY STRENGTH → VERY STRONG | STRONG | MODERATE | WEAK | VERY WEAK — IP LINE

NOTE: CONTOURS OUTLINE VARIOUS ANOMALY STRENGTHS.

GEOLOGICAL CONTACTS SHOWN: FOR LITHOLOGY REFER TO 1/1000' GEOLOGIC MAP

● PROPOSED DRILL HOLES

← OUTLINE OF FAVORABLE AREAS NOT TESTED BY DRILLING (ANOMALOUS I.P. AND/OR FAVORABLE GEOLOGY)

* NOTE: Based upon comparison of holes K-1 (core) w/ P8 and P8A, there is a 40% discrepancy in assays between core and percussion holes (in favor of core). As the percussion holes were drilled under heavy water pressure during winter, we do not trust their validity.

INDUCED POLARIZATION SURVEY

KELLEY PROJECT

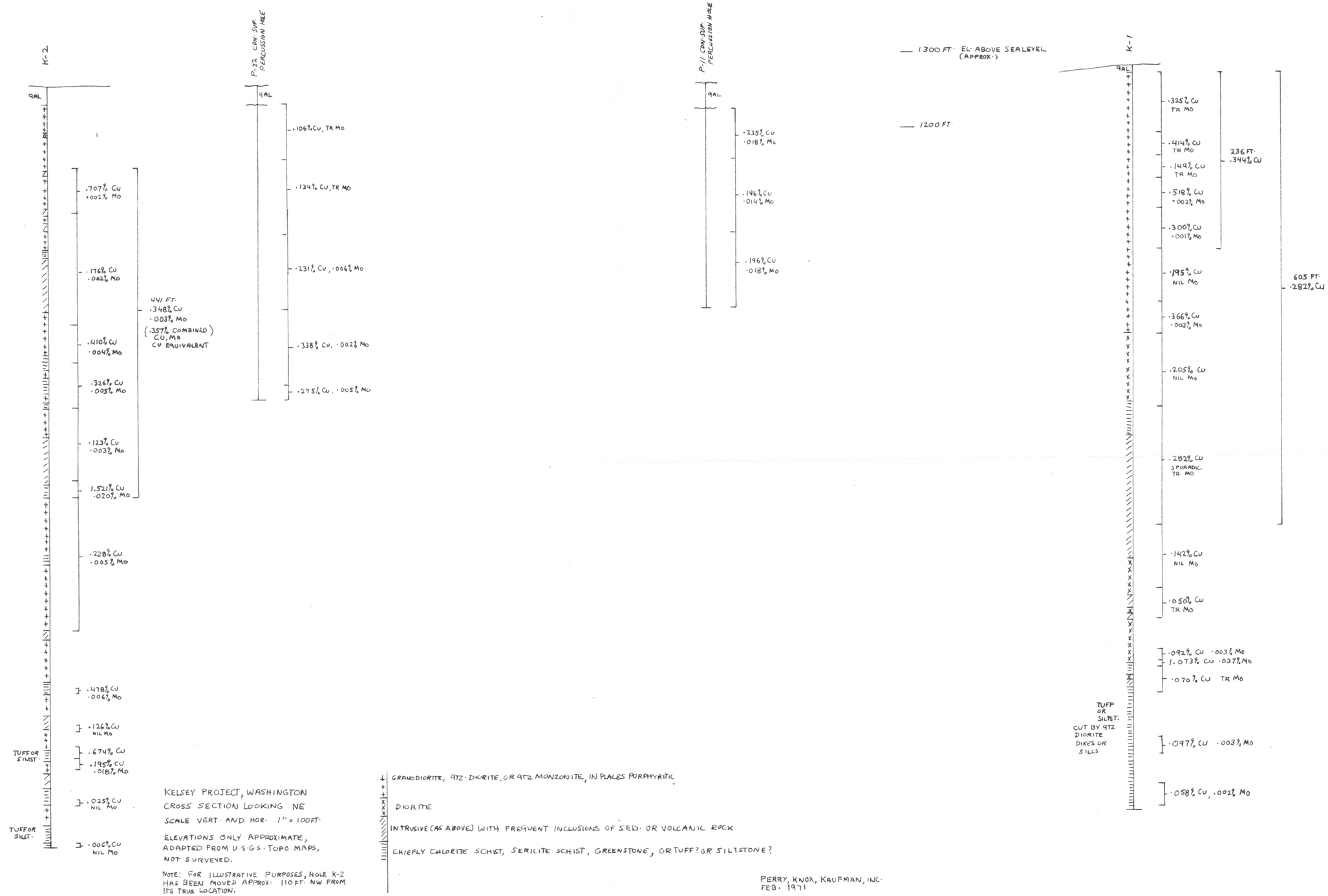
OSOYOOS, BRITISH COLUMBIA AND

OKANOGAN COUNTY, WASHINGTON

PREPARED BY: KELLY, MATHESON & ASSOC.

DISTANCES + EL. SURVEYED

SCALE: 1" = 500'

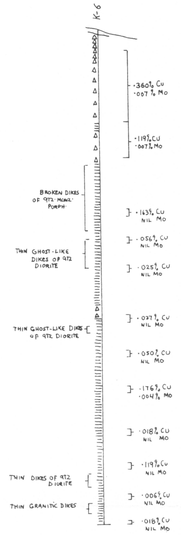


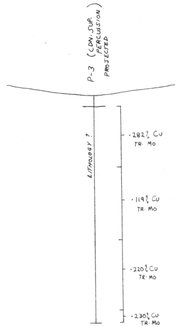
KELSEY PROJECT, WASHINGTON
CROSS SECTION LOOKING NE
SCALE VERT. AND HOR. 1" = 100FT.

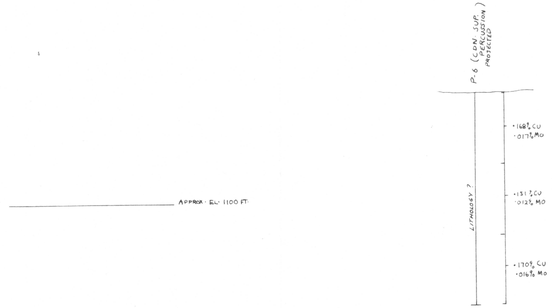
ELEVATIONS ONLY APPROXIMATE, ADAPTED FROM U.S.G.S. TOPO MAPS, NOT SURVEYED.

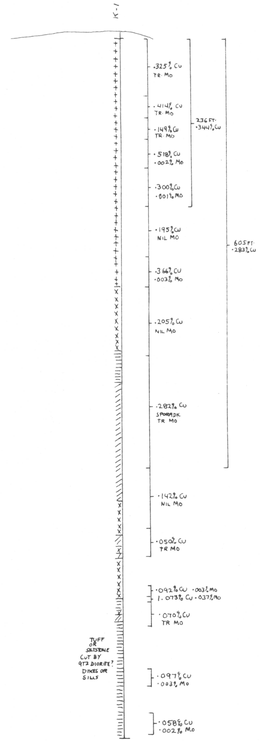
NOTE: FOR ILLUSTRATIVE PURPOSES, HOLE K-2 HAS BEEN MOVED APPROX. 110 FT. NW FROM ITS TRUE LOCATION.

PERRY, KNOX, KAUFMAN, INC.
FEB. 1971









KELSEY PROJECT, WASHINGTON

ILLUSTRATIVE CROSS SECTION LOOKING WEST

APPROX. SCALE VERT. AND HOR. 1" = 100 FT.

(ELEVATIONS ONLY APPROXIMATE, ADAPTED FROM U.S.G.S. TOPO MAP, NOT SURVEYED). DISCREPANCIES BETWEEN THIS SECTION AND SHOWN UP TOPO MAP (I.P. MAP) DUE TO DISTORTION OF MAP. DISCREPANCY IN DISTANCE BETWEEN HOLES P-3 AND K-6 BETWEEN SECTION AND I.P. MAP REFLECT DISTORTION OF MAP AND ERRORS IN PLOTTING OF IP LINES BY McPHAR. DISTANCE ON SECTION IS CLOSER APPROXIMATION THAN DISTANCE ON MAP.

BRECCIA W/ ABUNDANT FRAGMENTS

BRECCIA W/ LESS ABUNDANT FRAGMENTS

GRANODIORITE, 972 DIORITE, OR QUARTZ MONZONITE IN PLACES PORPHYRITIC, CHIEFLY 972 DIORITE

DIORITE

INTRUSIVE (AS ABOVE) WITH FREQUENT INCLUSIONS OF SED. OR VOLCANIC ROCK, LESS THAN 50% INCLUSIONS.

CHIEFLY GREENSTONE, OFTEN SCHISTOSE IN K-1, INCLUDES ARGILLITE (SILTSTONE) OR TUFF

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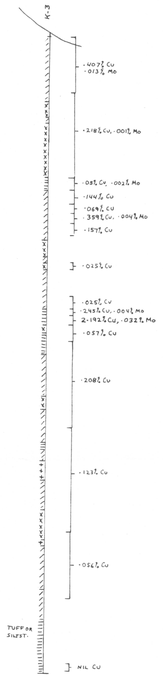
FEB. 1971



KELSEY PROJECT, WASHINGTON

CROSS SECTION LOOKING ENE

SCALE VERT. AND HOR: 1" = 100 FT.

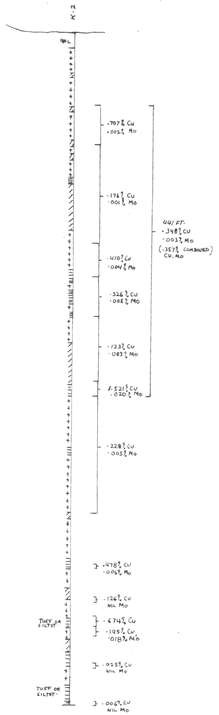
ELEVATIONS AND DISTANCES ONLY APPROXIMATE.

ELEVATIONS ADAPTED FROM U.S.G.S. TOPO MAP, NOT SURVEYED.

GRANODIORITE, QTZ DIORITE, OR QUARTZ MONZONITE, IN PLACES PORPHYRITIC.

DIORITE

INTRUSIVE (AS ABOVE) WITH FREQUENT INCLUSIONS OF SED. OR VOLCANIC ROCK LESS THAN 50% INCLUSIONS

CHIEFLY CHLORITE SCHIST, SERICITE SCHIST, GREENSTONE, OR TUFF OR SILTSTONE?

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