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TERRITORY OF ALASKA

DEPARTMENT OF MINES

PROPERTY EXAMINATION REPORT

KODIAK EXPLORATION COMPANY

SCHEELITE PROSPECT

ANTON LARSON DAY AREA

KODIAK QUADRANGLE

KODIAK PRECENCT

ALASKA

by

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Associate Mining Engineer

June 1955

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## KODIAK EXPLORATION COMPANY SCHEELITE PROSPECT

### SUMMARY

The scheelite occurrences on the property of the Kodiak Exploration company, Sharatin Mountain-Anton Larson Day area, Kodiak Island, are considered to have the possibility of proving to hold large reserves of low to medium grade tungston ore.

Abundant "float" has been found along the sedimentary series of this area for a distance of about 4 miles by members of this company.

The "float" has been traced to its source in a number of intercalated silicious nodimentary beds, which in themselves are visible at intervals for several miles. Their individual thicknesses vary from 2 to 8 and 10 foot. Those beds were orginally thought to be s-licified limestone; their actual identity has not yet been determined, although they are definitely of sedimentary origin.

Ideally located within 2 miles of the coast, and accessible by 10 miles of good road from the town of Kodiak, these occurrences warrant the attention of responsible mining organizations.

## INTRODUCTION

At request of George H. Cornelius and associates, an examination was made of the scheelite bearing area in vicinity of Anton Larson Bay, Kodiak Island. Between October 31 and November 7, 1954, three days were spent on the property; stormy weather and zero visibility prevailed except for the three days.

## LOCATION AND ACCESSIBILITY

The property held by Cornelius and associates (now known as the Kodiak Exploration Company) lies approximately  $1\frac{1}{2}$  to 4 miles southwesterly from south end of Anton Larson Bay in vicinity of Longitude  $152^{\circ}-00'$  and Latitude  $57^{\circ}-47\frac{1}{2}'N$ .\*

Most of the claims are located on ridge and its west slopes east of stream locally called Cornelius creek; the balance are located on west side of this stream and on east slopes of Sharatin Mountain.\*

The area is served by a good gravelled road the 10 miles from town of Kodiak, and the claims are 1 to 2 miles (airline) west of the road; it is about 2 miles northwest of the Naval reservation.

## TOPOGRAPHY

The mountains in this section have steep and precipitous slopes, with ridge crests mostly well round and slopes well scoured by recent glaciation. Sharatin Mountain on the west rises to 2869 feet elevation in  $1\frac{1}{2}$  mile from shoreline. Pyramid Mountain, 2 miles to the east, has an elevation of 2420 feet. Except for the precipitous sections, the slopes are generally easy to traverse; they are free of alder and will brush and the rank vegetation growth above the 500 to 600 foot elevation.\*\*

## TIMBER

There is no timber in this area, except for a few scattered spruce along the shoreline. Nearest supply for mining purposes would be on Afognak Island and the south end of Kenai Peninsula.

## WATER SUPPLY

The several streams in this area do not have sufficient flow to offer possibilities for appreciable power development. Cornelius creek, and the small streams flowing into it, probably would supply ample water for mining, milling, and camp use.

\* Refer to Plate 1

\*\* Refer to Plate 3, panoramic view of area.

## HISTORY AND OWNERSHIP

Until recently the mineral potential of Kodiak Island has been overlooked and neglected to a large degree since the early 1900's, with only a few mineralized sections receiving more than passing attention and upon which a limited amount of sub-surface work and development was undertaken many years ago. This is somewhat surprising, as personal investigations the past two years at a number of widely separated points along strong regional structures revealed mineralized areas of interest.

So far as is known the scheelite occurrences in the Sharatin Mountain-Anton Larson Bay area has not been noted, or its presence reported, prior to 1953.

During spring of 1953 a few pieces of sub-angular gravel, containing some scheelite, was found by one of the present owners along the bars of Cornelius Creek in vicinity of bridge crossing that stream.

In tracing this "float" upstream, fairly abundant "float" was found along the creek, along west slopes and along ridge crest on East side of Cornelius Creek, as well as at several points at mouth of ravines on East slopes of Sharatin Mountain, during balance of 1953 and during 1954.

With "float" slightly more abundant in numerous ravines entrenched in a cross-fracturing system having a southeasterly bearing, and showing some evidence of mineralization, seventeen mineral claims were located by Cornelius and associates during summer of 1954, with location lines following course of the ravines.\*

Additional prospecting by the discoverers traced source of some "float" direct to several intercalated silicious beds in the sedimentary series of the region. During period of last years examination it was concluded that the scheelite occurrences will probably be found to be largely confined to these silicious (silicified limestone or quartzite?) beds; "float" partially exposed in the moss-covered slope, found during last day on the property, was readily traced to its source in a previously unnoticed silicious bed 150 feet up the slope.

Examination of the several ravines the claim owners considered to be main source of scheelite "float", revealed no scheelite mineralization of interest along course of the cross-fracturing system. Instead, it confirmed the initial impression that source of the fairly abundant "float" found along the strike of the sediments for 3 or 4 miles distance would be largely confined to the silicious beds. As a result 28 mineral claims were staked shortly thereafter by Cornelius and associates with location lines following the mineralized silicious beds, on east side of the creek.\*\*

Outcrops of similar light colored sediments were noted below ridge crest of Sharatin Mountain, and it was suggested that they be checked for prob-

\* Refer to Plate 2

\*\* Refer to Plate 2

able source of the scheelite "float" found in ravines near base of Sharatin Mountain on west side of creek. That was done a few weeks later, and an (accessible) 27 inch section of a 6 to 8 foot wide silicious measure was sampled and sent in for analysis. This sample carried 3.45%  $WO_3$ , and again favored host rock for scheelite deposition. They report having staked several claims along that structure.

It is interesting to note that this same group of men reported having found scheelite "float" along the strike of these sediments a mile to 2 miles to northeast of the road.

It was reported by others that scheelite "float" has also been found about 20 miles to the southwest; specimen reputedly from there closely resemble the occurrences in Sharatin Mountain area.

During the past winter Cornelius and associates formed the Kodiak Exploration Company, and all their claims in this area have been transferred to the company.

It is to be noted that the Red Cloud mineral claim, surrounded by the KECO mineral claims, is held by others.\*

#### GEOLOGY

Geological mapping of Kodiak Island has been limited to coastal areas by the U. S. Geological Survey, and to date is limited to reconnaissance surveys.\*\*

Formations of the Sharatin Mountain-Anton Larson Bay section are shown to be composed of slate, graywacke, and argillite (undifferentiated Mesozoic); along the shoreline to the north (at entrance to Anton Larson Bay) and to west (at east side of Sharatin Bay) diorite or granodiorite stocks or "tongues" of small areal extent are mapped (upper Mesozoic or early Tertiary).\*\*

In immediate area of the scheelite occurrences no intrusives were noted, but it is possible that a more thorough study and detailed mapping may locate dikes, sills, or small stocks or cupolas which may be responsible and/or closely related to the mineralizing agencies. It is possible that the strong cross-fracturing system (which is approximately at right angles to strike of the sediments) may be the mineralizing structural control; in this case it may be found that the strongest scheelite concentrations occur near the fractures.

In addition to the slate, argillite, and graywacke shown on USGS maps (\*\*\*) there are an undetermined number of "intercalated" beds of a light blue-gray sediment, originally considered to be a silicified limestone but may be a quartzite.

\*

\* Refer to Plate 2 & 3

\*\* Refer to USGS Buls. 868-B Plate 2, & 880-C Plate 2.

Cornelius creek is entrenched in a normal fault plane; vertical displacement is suggested to be with the range of 500 to 800 feet. It is possible (?) the scheelite bearing silicious sedimentary beds near crest of ridge of Sharatin Mountain may be the same as those outcropping on ridge on east side of Cornelius creek. If they are proven not to be the same, the scheelite bearing sedimentary measures re-occur throughout a much greater thickness of the sediments than now considered.

The cross-fracturing system, most pronounced on east side of the creek where numerous parallel ravines are entrenched along their strike, does not appear to have caused any marked displacement of the sediments, which they cut more or less at right angles.

This area lies midway between the regional faults which have been mapped and are shown along northwest and southwest margins of Kodiak Island.\*

#### Mineralization

Minerals present in order of their abundance appear to be limited to scheelite, arsenopyrite, chalcopyrite, and pyrite. Most samples taken as well as those submitted by the owners have been checked for gold and silver with negative results except for one. This exception was submitted in Marcy 1955; it resembled the average sample taken last fall, but on assay showed 1.90 oz gold. Record of location from which this sample was taken has not been found by the owners.

The scheelite occurs as finely disseminated grains and fine veinlets, and occasionally as larger "blebs".

Arsenopyrite is present also as finely disseminated grains and fine veinlets; it appears in some cases to be more plentiful with increasing scheelite content, but in none of the samples does it appear to exceed an estimated ½% (by weight) of the sample.

Chalcopyrite and pyrite occur as occasional grains or small "blebs".

The various samples and showings were checked for radioactivity but none was found.

The mineralization to date appears to be confined to the light blue-gray silicious sedimentary measures, and to date 4 or 5 of these have been found.

#### Development Work

Up to time of examining the area no stripping or trenching had been done to determine lateral extent of scheelite mineralization at any of the discoveries. Efforts up to that period had been confined to search for "float" and the tracing of it to its source. A program of stripping and trenching to be followed closely by sampling was to be undertaken this spring, and is now said to be underway.

\* Refer to Plate 2, USGS Buls. 868-B & 880-C

### Sampling

Samples taken, their location and description, and values are as follows:-

#### 1954 Sampling Results

No.	Width Inches	WO <sub>3</sub> %	Description
34-V	35"	1.75	Red Cloud M.C. Outcrop on SW side of ravine. Est. 1% WO <sub>3</sub> . Iron stained silicious sedimentary bed.
35-V	18"	0.02	Red Cloud M.C., approx. 150 SW of 34-V on same bed. Grab taken on rocky point. Est. ±0.1% WO <sub>3</sub>
36-V	36"	nil	Lower Summit M.C., 20' S. of disc. post at outcrop in ravine. Iron stained sediment. No scheelite noted.
37-V	45"	nil	6' Se of 36-V. Oxidized calcareous argillite in wide sheared zone. Occasional "speck" scheelite. Picked pieces said to have shown good values.
39-V	39"	nil	30' S. of 37-V. Sheared calcareous argillite. No scheelite noted.
44-V	12"	nil	Kodiak #12 M.C. N. bank of ravine. Calcareous argillite. No scheelite noted in sample. Few picked pieces show few fine grains.
45-V	30"	nil	25' above & 30' S. of 44-V. Highly oxidized, weathered calcareous argillite. No scheelite note in sample but some visible along fractures of picked pieces.
46-V	52"	nil	10' S of 45-V across sheared, oxidized calcareous argillite. No scheelite visible in sample but picked pieces reported to have shown small amounts.
47-V	36"	0.03	Est. 100' W. of 45-V on W. side ravine. Oxidized, calcareous argillite.
48-V	42"	0.28	On Blue Hill M.C. at new discovery in silicious sedimentary bed, source of large piece of "float" found 150' down slope which showed good values. Est. -2% arsenopyrite, chalcopyrite, and pyrite.

Note: All above samples were run for Au-Au with negative results.

From observation it was evident that "showings" in the various ravines examined were not the source of the abundant "float" found along the several miles of the sedimentary series in this area. The ravines were the sections in which some of the owners concentrated their efforts on the theory the cross-fracturing system was the most likely points of interest. Although they had found a number of the scheelite bearing silicious sedimentary measures, no trenching or stripping had been done upon them, and it seemed essential to devote most of the examining period to study of the ravines and properly sampling the points in them considered to be the most interesting, in order to convince them that the silicious beds are the favored "host" structure in the area.

## CONCLUSIONS

The abundance of scheelite "float" found along this sedimentary series, for a distance of 3 to 4 miles (as a minimum), by members of the Kodiak Exploration Company (KECO), suggests that this area has a potential of real economic importance.

It was definitely established during period of examination in 1954 that the scheelite occurrences are associated with an undetermined number of "intercalated" silicious sedimentary beds (originally thought to be a highly silicified limestone, but whose actual type classification has not yet been determined). At least 5 of these beds have been found all of which carry appreciable amounts of scheelite. Their thickness is 2 to 10 feet.

The horizontal width across the sediments in area in which they occur (from ridge crest on east side of Cornelius creek to ridge crest of Sheratin Mountain) is at least 1 mile, and it is quite possible that additional similar structures will be found.

"Float" found on both slopes of east and west sides of the creek have more or less identical appearance and characteristics. Numerous samples submitted of "float" in the past carried good values, and chipped sample taken across 27 inches width (accessible portion of a 6 to 8 foot width near crest of Sheratin Mountain ridge) carried 3.45%  $WO_3$ , makes that occurrence of special interest.

Minerals associated with the scheelite-arsonopyrite, chalcopyrite, and pyrite- are those commonly found in most scheelite deposits. No molybdenite has been observed or reported.

Although factual information of the occurrences are meager due to limited work to date, structural conditions suggest that this area may prove to hold large reserves of low to medium grade scheelite ore; there is also the "chance" the limits of this area may be extended considerable distances to the southwest and northeast.

The area is believed one which warrants the investigation and study of responsible mining organization.

## RECOMMENDATIONS

It was recommended that the owners concentrate their initial efforts this season to trenching across the scheelite bearing structures at regular intervals and/or to strip along strip of the mineralized beds to determine its lateral extent. Channel samples should be taken at 5 foot intervals as this work progressed.

This work is essential before a proper evaluation can be made of the potential value of these deposits. It is necessary work to complete before an examining engineer or geologist can make an intelligent appraisal of its possible value.

It is suggested this work first be concentrated on the measure showing the most interesting values.

Anchorage, Alaska  
June 18, 1955

Martin W. Jasper  
Associate Mining Engineer  
Territorial Department of Mines



DEPARTMENT OF MINES  
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JAN 19 1933

ASSAY OFFICE  
ANCHORAGE, ALASKA

The W03 content of the sample is higher than normally encountered in contact deposits. We have thus requested the laboratory to suspend detailed testing until such time as more information is available as to the geology of the deposit, and as to the representative nature of the sample on hand.

Providing that a substantial ore reserve of a grade approaching that of the sample can be developed, we may be interested in some working arrangement with you for the development of the property. However, in order to establish our possible interest in the venture we suggest that one of our engineers visit you to study such engineering reports as you have available, and if possible make a field study of the property. If his report is favorable, we can then discuss further our possible participation.

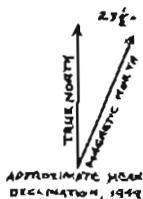
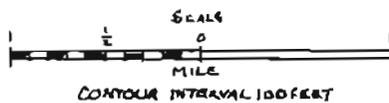
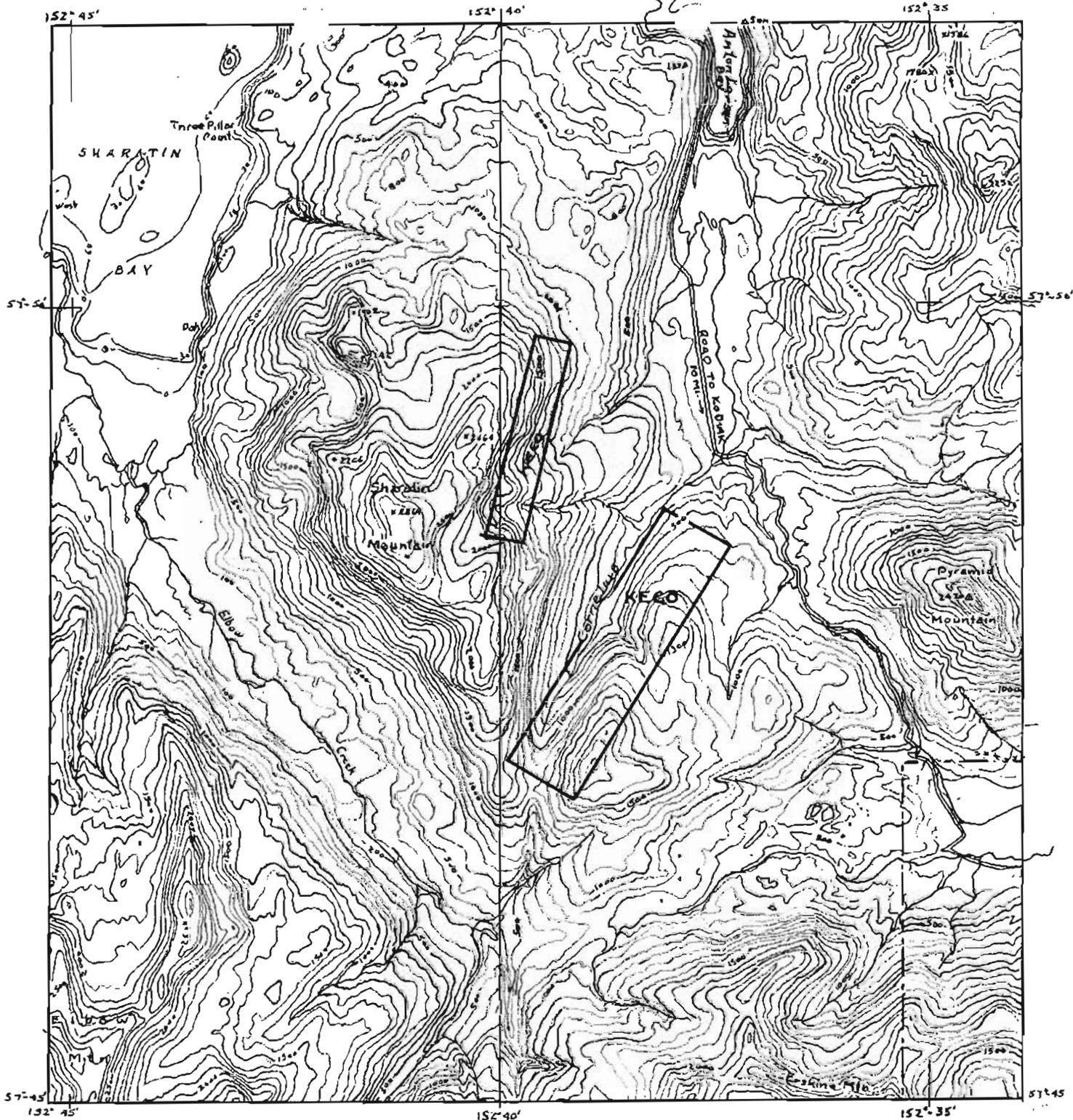
We realize that the season is late and that weather conditions may be unfavorable for a field examination. However, if you agree with the proposal and if weather will still permit a surface examination, please advise by wire or airmail and we will arrange for one of our engineers to visit you at the property immediately.

Sincerely yours,

WAH CHANG CORPORATION

CMD/11

C. M. Dice  
Vice President



TAKEN FROM  
U.S.G.S. TOPOG. MAPS  
KODIAK D-2 & D-3, ALASKA

SHOWING LOCATION OF  
KODIAK EXPLORATION COMPANY'S  
TUNGSTEN PROPERTY

by  
M.W. Jasper, ASSOC. MIN. ENG. - T.D.M.  
ANCHORAGE, ALASKA MAY 20, 1955

PLATE I

Note: Unsurveyed, location of KECO  
claims is approximate only. m.w.j.

CORNELIUS

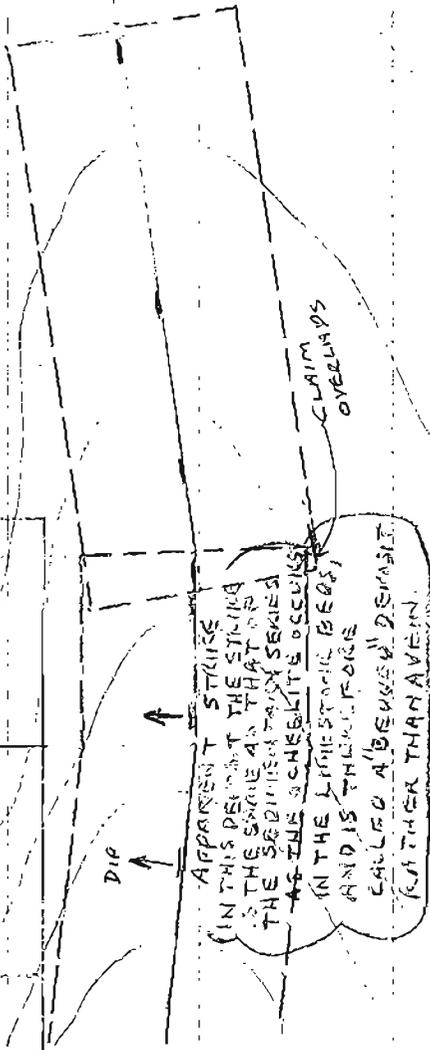
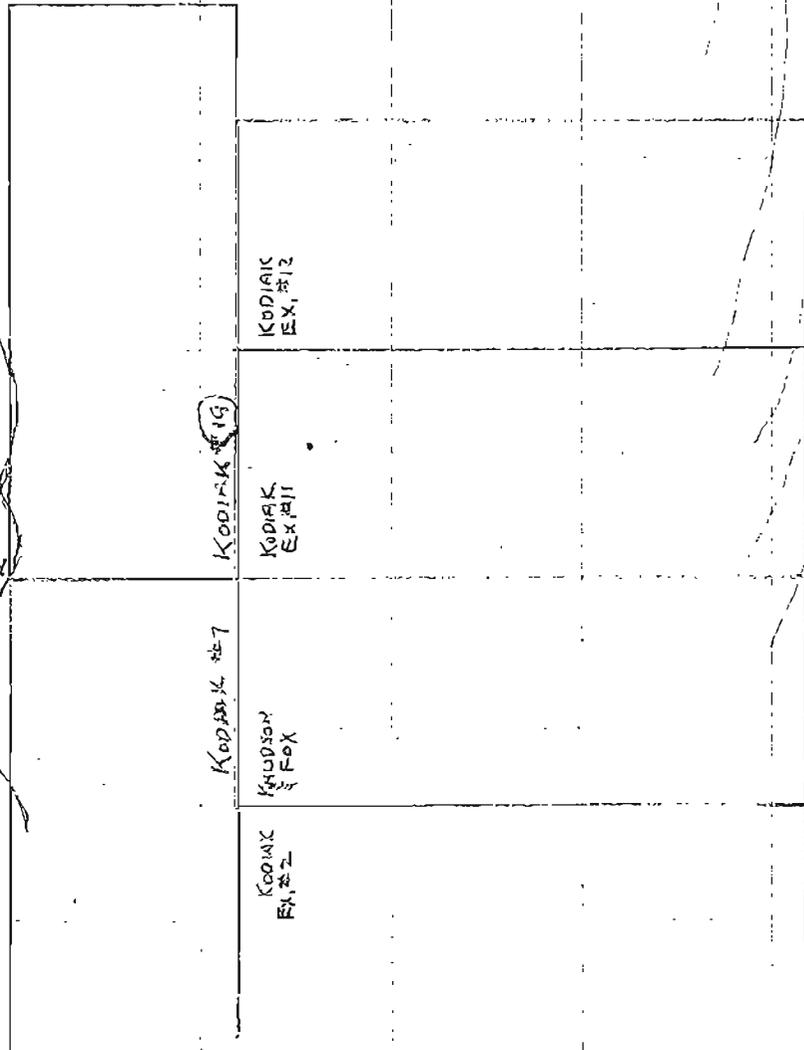
11/8/54

KECO. - G.H.C. ET AL

NOTE: - THE SERIES OF CLAIMS (SHOWN WITH DASHED LINES) IS AN "GUESSTIMATED" POSITION OF HOW THE CLAIMS WILL APPEAR IN PLAN, WHEN YOU LOCATE THEM ALONG THE STRIKE OF THE LIMESTONE BED. THE EXAMPLE SHOWN HERE WITH IS BASED UPON THE SCHEBLITE OUTCROP THAT WAS FOUND & EXAMINED LATE AFTERNOON OF NOV. 7, 54.

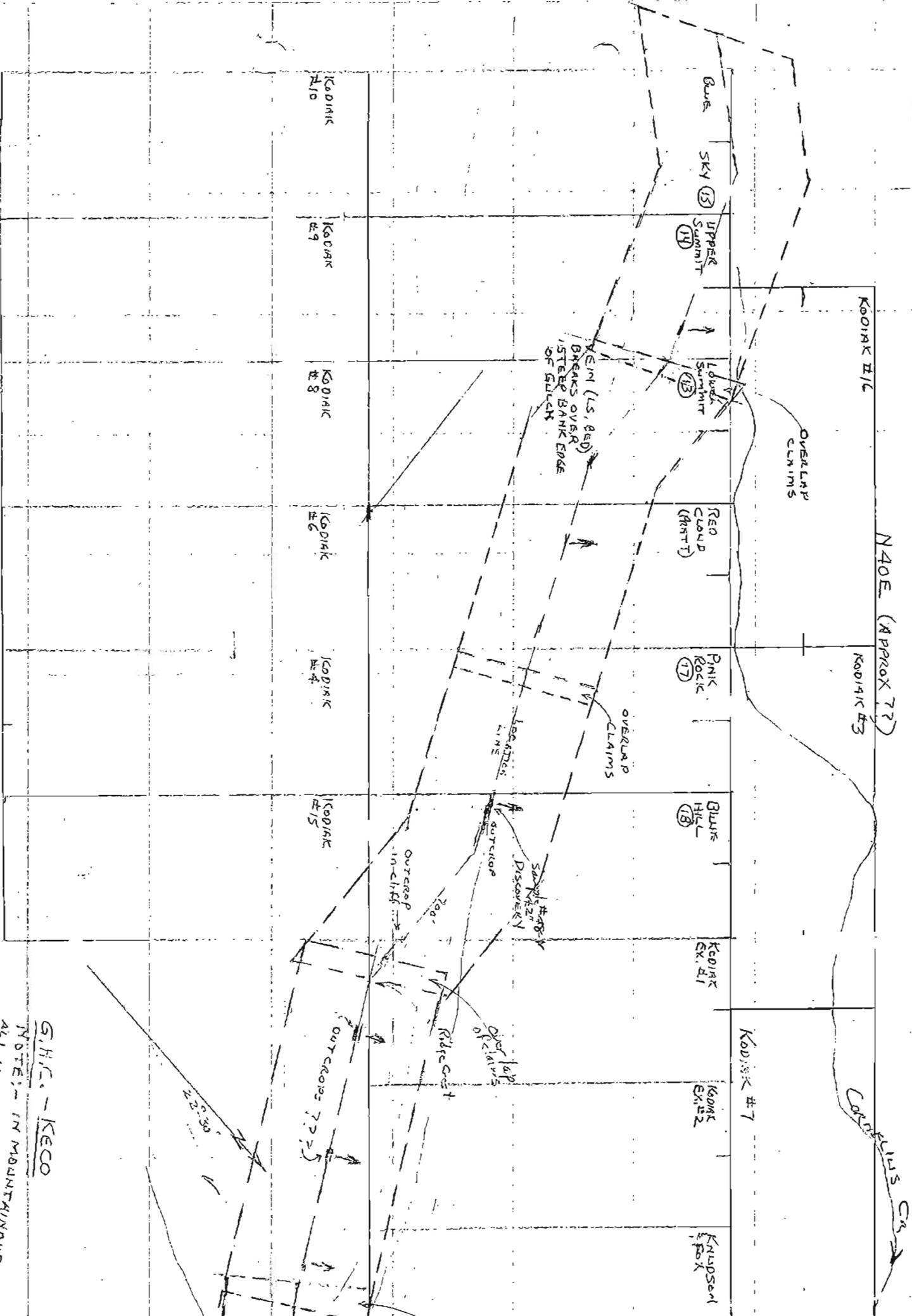
THE VARYING DIRECTIONS ARE DUE TO THE CHANGE IN SURFACE STRIKE (KNOWN AS APPARENT STRIKE), WHERE THE SURFACE HAS A UNIFORM SLOPE. A VEIN (IN THIS CASE THE BEUDANT DEPOSIT) WILL FOLLOW A RELATIVELY STRAIGHT LINE, AND IT WILL HAVE SAME STRIKE AND DIP AS THE SLATES ARGILLITES, GRAYWACKES, LIMESTONE OR THIS SEDIMENTARY SERIES. THE REGIONAL STRIKE OF SEDIMENTS IS GIVEN AS AVERAGE N40E. LOCALLY, I FOUND IT TO VARY FROM N35 TO 55E.

AS THERE ARE A NUMBER OF LIMESTONE BEDS, LOCATION OF CLAIMS ALONG THEM SHOULD BE SHOWN THE SAME GENERAL DEVIATIONS & WILL BE ROUGHLY PARALLEL. CROSS-CUTTING WILL BE FOUND & WILL OFFSET (DISPLACE) THE SCHEBLITE BEDS APPRECIABLE DISTANCES HORIZONTALLY.



(assumed) Kodiacs Guesst. G.H.C.

Finished @ 11/9/54 - 2:45 PM  
Kodiac  
Finland E.C.O. - mining  
of Kodiac



N40E (APPROX 77)

KODJAK HILL

KODJAK #3

CORRELL'S CA

OVERLAP CLAIMS

Blue SKY (13) UPPER Summit (14)

Lower Summit (13)

RED CLOUD (RtT)

PINK ROCK (17)

Blue Hill (18)

KODJAK Ex. #1

KODJAK Ex. #2

Knudson Fox

VEIN (Ls, RED) BREAKS OVER STEEP BANK EDGE OF GULCH

OVERLAP CLAIMS

LOCATION LINE

Sample #87 - Discovery

Over top of claims

Ridge Crest

Outcrop in cliff

Outcrops 772

KODJAK #10

KODJAK #9

KODJAK #8

KODJAK #6

KODJAK #4

KODJAK #15

KODJAK #7

G.H.C. - KECO

NOTE: - IN MOUNTAINOUS REGION ALL VEINS (OR "B5000" DEPOSITS) CHANGE THEIR APPARENT STRIKE WITH EVERY SWARD CHANGE IN MOUNTAIN SLOPES. THE ONLY CHANGE IN STRIKE IS A VERTICAL VEIN. THE ONLY EXCEPTION

SCALE: 1" = 500'