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C439

TASEKO RECONNAISSANCE

1975 PROGRAM

for

CHEVRON STANDARD LIMITED

Dec. 1975

M. FOX

CONTENTS

ILLUSTRATIONS

I SUMMARY

During July and August, 1975, a four week-long geological and geochemical reconnaissance was carried out in the Taseko Lakes area of southwestern British Columbia. The work was a continuation of the disseminated gold reconnaissance done in the Bridge River area of British Columbia in 1974. A total of approximately 300 square miles was prospected and sampled, but coverage was not uniform. Rather, the work was done in selected areas of a 1,000 square mile region, containing known copper, gold and silver mineralization, which lies along the northeastern flank of the Coast Crystalline Complex.

A total of 368 rock chip, soil, and silt samples were collected and assayed for gold and arsenic. Favorable results have led to the acquisition of three mineral claims, totalling 52 units, at two widely separated localities within the reconnaissance region.

I I I N T R O D U C T I O N

1 - Location and Access

Reconnaissance geological mapping and geochemical sampling were done in selected areas of NTS map areas 92-J-14 and 92-O-2, 3, 4, 5, and 6, covering a northwesterly trending area 40 miles long and 20 miles wide in the Lillooet and Clinton Mining Districts of British Columbia. (See Figure 1) Two base camps were used during the reconnaissance program. The first was located on the southeastern shore of Upper Taseko Lake, at the side of an 80 mile long bush road (passable by two wheel drive vehicles in dry weather) which connects with the Williams Lake - Bella Coola highway to the north. The second base camp was located in Taylor Basin, approximately 11 miles due north of Gold Bridge, British Columbia, and is accessible by a 25 mile long route from Gold Bridge, the last eight miles normally passable only by four wheel drive vehicles.

2 - Physiography and Glaciation

The bulk of the reconnaissance work was carried out between elevations of 6,000 and 9,000 feet in an entirely glaciated region lying within the Coast Mountains physiographic province. Average relief of the region is approximately 4,000 feet; most peak elevations are between 8,000 and 8,500 feet and treeline is considerably lower at approximately 6,500 feet. West of Taseko

Lakes the mountains are extremly rugged, particularly so in the vicinity of Air Force and Spectrum Peaks, and traverses were done here with considerable difficulty. Ridges througout the reconnaissance area are generally narrow-crested and precipitous, glaciation having cut many of them into jagged, serrated razorbacks. Bedrock exposure is excellent in most areas, exceptions being terranes underlain by less resistant sedimentary units such as the Taylor Creek Group shales, where the mountains are rounded and less steeply sloping and bedrock is concealed by alpine vegetation.

3 - Reconnaissance Program

Field work commenced on July 18th and was terminated on August 18th. The first base camp was established adjacent to a sandy beach on the southeastern shore of Upper Taseko Lake. Reconnaissance work was done in the surrounding NTS map areas 92-O-3, 4, 5, and 6, covering an area of approximately ~~300~~ 150 square miles. Progress was hampered initially by the inability of Transwest Helicopters Ltd. to produce a contract machine and for the first several days the services of a Bell 206-B Jet Ranger were obtained on a casual basis. This helicopter was subsequently replaced by a Hiller 12-E, more suitable for the logistics of the program, and which was retained until the termination of field work. On July

31st, the camp was moved 30 miles east to the abandoned Lucky Strike minesite, approximately 11 miles north of Gold Bridge. This camp was situated close to the eastern limits of the reconnaissance area, and also served as a base camp for property work which was being done concurrently on the adjacent Eldorado Mountain claims.

Field methods were similar to those employed during the 1974 reconnaissance. They are fully described in the field report for the 1974 work and are not reiterated here.

III GEOLOGY

1 - General Geology

All of the reconnaissance area has been mapped previously by the Geological Survey of Canada, but geological information has been published only for the westernmost portion, which was prospected from the Taseko Lakes base camp. (See GSC Map 29 - 1963) GSC field maps, at a scale of 1:50,000, covering the remainder of the reconnaissance area, are available for examination and the geological information on these maps was sketched onto base maps used during the reconnaissance work.

The reconnaissance area embraces a broad transitional zone between the Coast Crystalline and the Intermontane geologic provinces. The underlying rocks are mainly Cretaceous volcanics and pyroclastics of the Kingsvale and Taylor Creek Groups and calcareous shales, siltstones, and conglomerates of the Cretaceous Taylor Creek Group. Locally, intense faulting has exposed fossiliferous Jurassic rocks of the Relay Mountain Group. The Coast Crystalline Complex forms the southern boundary of the reconnaissance region and is characterized by Cretaceous and Tertiary granodiorites of monotonously uniform composition. Throughout the eastern portion of the reconnaissance area, numerous small plugs and stocks of Tertiary granite and feldspar porphyry intrude the Taylor Creek Group rocks, no doubt representing a more

acidic differentiation of the Coast Ranges granodiorites. The sedimentary and volcanic rocks have been extensively block-faulted, indicating considerable uplift along the flanks of the Coast Crystalline Complex.

A number of Cu-Ag-Au occurrences in the area have been known since the 1920's, most notably the Pellaire and Taylor Windfall properties, and Au-tellurides are present in narrow quartz veins which outcrop on an unnamed meuntain just west of the Tchaikazan River a few miles above its mouth. In the 1960's the porphyry copper potential of several Cu-Au occurrences in the Taseko River valley was investigated. The Cu values in most of these showings (Buzzer, Mohawk, Motherlode, Spokane, and Tennessee) occur in chalcopyrite and malachite in a quartz gangue in elongated, pod-like crush zones in granodiorite and probably represent epithermal rather than porphyry copper type mineralization. Throughout the reconnaissance area, many of the intrusive bodies are highly pyritized and silicified. Where sedimentary rocks are in contact with these pyritized intrusives, they have been fractured, silicified and pyritized and sometimes baked to a brittle hornfelsic texture. The very conspicuous gossans associated with these intrusive centres are visible for many miles. The weathering of the pyrite hae resulted in the formation ef several sizeable limonite deposits on the valley floors, where Fe-rich

groundwaters come to the surface as springs. Mineralization throughout the region occurred in early Tertiary time.

2 - Lithology

Rather than using a numbered sequence of unit classifications, the GSC field practise of using lettered abbreviations has been adhered to. The abbreviations below correspond to those used on the GSC field maps which served as a data base for the reconnaissance. Where these field maps were not available (92-O-5 and 6) a correlation was made between the numbered units of earlier published data (GSC Map 29 - 1963) and the more detailed classification below.

Qal Quaternary alluvium

mplTvb black, dark grey, and dark brown vesicular Tertiary flow basalts; flat-lying or dipping gently northwards; equivalent to Unit 17 on GSC Map 29 - 1963.

KKGv Cretaceous Kingsvale Group volcanics; these rocks outcrop most extensively in NTS map areas 92-O-5 and 6; considered unfavorable as host rocks for a disseminated gold deposit, they consist of great thicknesses of dark green and grey coarse volcanic breccias, tuffs, and flows of andesitic composition, probably corresponding to Division B of the Kings-

vale Group as subdivided by the GSC.

EKTCS Early Cretaceous Taylor Creek Group sediments; the unit is characterized by massive beds of well sorted chert pebble conglomerate, dark grey to black occasionally limey and concretionary shales, and dark green to brown calcareous siltstones and greywackes; these rocks were found to be the most calcareous and carbonaceous unit within the reconnaissance area.

EKTCV Early Cretaceous Taylor Creek Group volcanics; light to dark green, generally unaltered tuffs, breccias, and flows of andesitic composition; these rocks outcrop principally in the western portion of the reconnaissance area where they are interbedded and in fault contact with EKTCS rocks; stratigraphic relationship to EKTCS is uncertain.

LKV Lower Cretaceous volcanics; these rocks outcrop extensively in NTS map areas 92-O-3 and 4; the unit was not sampled because it was considered to be unfavorable as a host for disseminated gold mineralization; where examined it was found to consist of epidotized and partly silicified tuffs and amygdaloidal (epidote, calcite) and porphyritic flows of andesitic composition, often indistinguishable in the field from EKTCV.

LKS Lower Cretaceous sediments; rocks of this unit resemble EKTCS and it may be that LKV and LKS are local variations of the Taylor Creek Group rocks; where examined, this unit was found to consist of coarse chert pebble conglomerates, calcareous and Fe-rich greywackes, and minor siltstones, sandstones and shales.

EKV Early Cretaceous volcanics; massive beds of dark green and purple tuffs, breccias, and amygdaloidal (epidote, calcite) flows of andesitic and basaltic composition; similar to EKTCV and LKV; not sampled extensively.

JKRM Jurassic and Cretaceous Relay Mountain Group sediments; one of the most easily distinguished units in the field; massive calcareous beds of argillaceous and arenaceous rocks containing an abundance of fossil remains of Upper Jurassic and Lower Cretaceous shallow water marine fauna; predominant rock types are coarse greywackes, and calcareous silty sandstones and siltstones; concretions are locally abundant.

lmJp This unit was observed only in NTS map area 92-O-3 where it is in fault contact with JKRM and EKTCS; it is comprised mainly of coarse, siliceous greywackes and fine chert pebble conglomerates, sometimes calcareous, which have in places been extensively silicified and pyritized so that the rock

sometimes superficially resembles the ETfp intrusives which outcrop in the southeastern portion of NTS map area 92-O-3.

INTRUSIVE ROCKS

ETfp Early Tertiary feldspar porphyry; typically a medium to coarse-grained leucocratic quartz feldspar porphyry containing abundant hornblende; the quartz and feldspar phenocrysts are usually 1 - 4 mm in diameter and are set in a fine-grained dark greyish-green groundmass which sometimes gives the rock the appearance of a porphyritic andesite; in many areas this unit is heavily pyritized resulting in the development of the highly conspicuous gossans described in the section dealing with the regional geology of the reconnaissance area; unit includes minor granodiorite, gabbro and rhyolite; considered to be the most important intrusive unit in relation to anomalous geochemical values.

Tg Tertiary granite; not a commonly occurring unit within the reconnaissance area; where examined it was found to consist of a medium-grained pink biotite granite or granodiorite, closely resembling the biotite granite which outcrops in NTS map area 92-J-14 on the southern portion of the Asp mineral claim; the unit is probably older than ETfp and may be a subordinate phase of the

Coast Crystalline Complex intrusive rocks.

Tgd Tertiary granodiorite; not examined during the reconnaissance; described by the GSC as a non-foliated coarse-grained biotite granite and quartz diorite.

KTgd Cretaceous and Tertiary granodiorite; a greenish granodiorite and diorite with indistinct to prominent gneissosity; typical of the granodiorite and diorite which outcrop over thousands of square miles in the Coast Ranges; near the Taylor Windfall minesite local intense chloritization of this unit was observed.

To the above units the following (Tsh) unit must be added although there is some doubt in the writer's mind as to the veracity of classification and age assigned to this unit by the GSC.

Tsh Tertiary shale; includes varicolored andesitic pyroclastic rocks intercalated in places with grey, greenish-grey, or mauve massive or porphyritic flows and locally interbedded with shale and conglomerate; between Palisade Bluff and Mount Warner this unit consists massive and amygdaloidal flows of andesitic and basaltic composition interbedded with highly silicified and pyritized rhyolitic tuffs which were not differentiated by the GSC; shales and conglomerates were not observed

anywhere in this area and were it not for the rhyolitic tuffs it would be extremely difficult to distinguish the rocks of this unit from the volcanics of EKTCV, LKV, and EKV.

3 - Geological Reconaissance

(i) Taseko Lakes Area

During the reconnaissance work in the Taseko Lakes area, special attention was given to extensively outcropping beds of intensely silicified and variably pyritized rhyolitic tuffs which outcrop from Palisade Bluff to Mount Warner. The tuffs occur in Unit Tsh and were not differentiated by the GSC from underlying and overlying massive flows of dark green to dark brown vesicular and amygdaloidal relatively unaltered basalts. It was evident in the field that silicification and pyritization had occurred selectively in the tuffs, most likely because of their high permeability relative to the basalts. These tuffs host gold mineralization at the Taylor Windfall minesite at the foot of Palisade Bluff and reconnaissance sampling was done to investigate the possibility of a continuation of low grade mineralization along strike. Despite the fact that prospectting revealed the presence of minor disseminations and veinlets of arsenopyrite in these beds, geochemical analyses were on the whole disappointing and the locale of the minesite was concluded to be of little further intersest.

The tuffs are quite widespread, outcropping on the north side of Taseko River at the Taylor Windfall minesite, Palisade Bluff, Rae Spur, Fee Spur, and Denain Spur. South of the Taseko River fault similar tuffs outcrop extensively on Wilson Ridge. The apparent remarkable uniformity of composition and alteration of the tuffs, in addition to similar attitudes on both sides of the fault, suggest a stratigraphic relationship throughout the area. It seems highly unlikely that they could represent (as was hypothesized for Wilson Ridge) the leached cap of an intrusive mass.

(ii) Dash Hill - Mount Sheba Area

Another area which was initially considered to be of special interest, but which later proved to be disappointing , was the immediate environs of Dash Hill. There (92-O-3, northeast sector), the GSC had mapped three sizeable bodies of ETfp as being in contact with calcareous greywackes and shales of LKS. Relatively calcareous shales (EKTCS) are extensively exposed nearby (to the south and southeast) in a broad well-faulted syncline. Reconnaissance work established that the intrusive bodies had been incorrectly mapped and were actually fault-bounded beds of silicified, coarse, angular grits which are a finer-grained equivalent of the Taylor Creek Group quartz pebble conglomerate. The silicification of the grits has resulted in a blurring

of the boundaries of the small quartz fragments which comprise up to 75% of the rock, resulting in a texture which superficially resembles that of the quartz feldspar porphyries which outcrop elsewhere in the map area. Alteration in this area was otherwise localized in and around fault zones, where carbonatization was observed to be confined principally to actual shears. Elsewhere, geochemical results were not encouraging, with the exception of an area adjacent to Graveyard Creek, north of Elbow Mountain, and which is discussed later in the report under Connemara and Mousetrouser mineral claims.

IV GEOCHEMISTRY

1 - Analytical Procedures

A total of 368 rock chip, soil, and silt samples were collected and analysed for Au and As. All analyses were done by

Vangeochem Lab Ltd.
1521 Pemberton Ave.
North Vancouver, B.C.

Analytical techniques employed were identical to those used during the 1974 reconnaissance. They are fully described in the 1974 report and are not reiterated here.

2 - Statistical Analysis

No statistical analysis of 1975 results was done. Cumulative probability curves from the 1974 report are included here for reference. (Figures ,). Anomalous threshold values are 200 ppb for Au and 225 ppm for As. It should be noted that As values are in ppm, not ppb, as indicated on the probability plot for As.

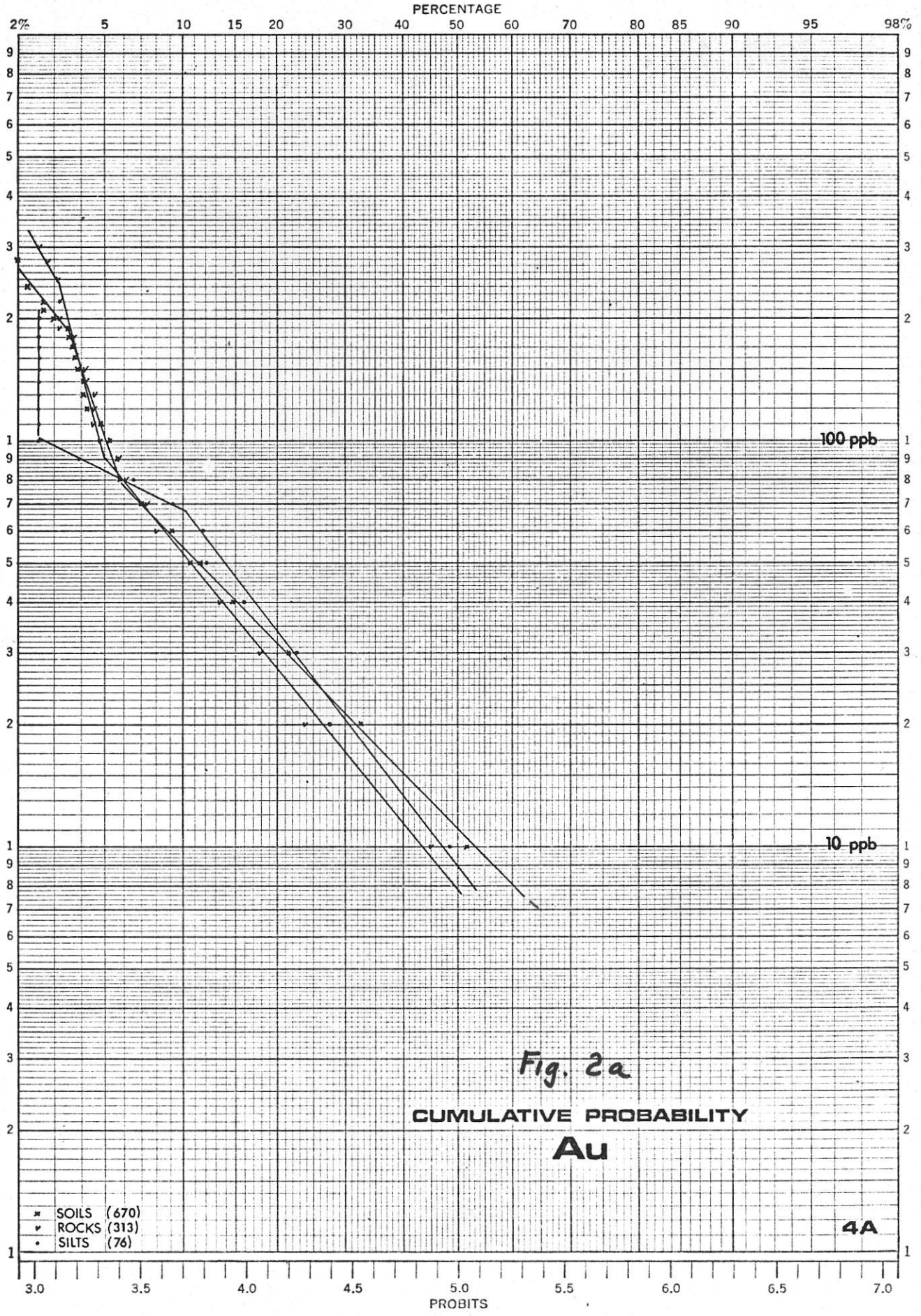

Fig. 2a

CUMULATIVE PROBABILITY

Au

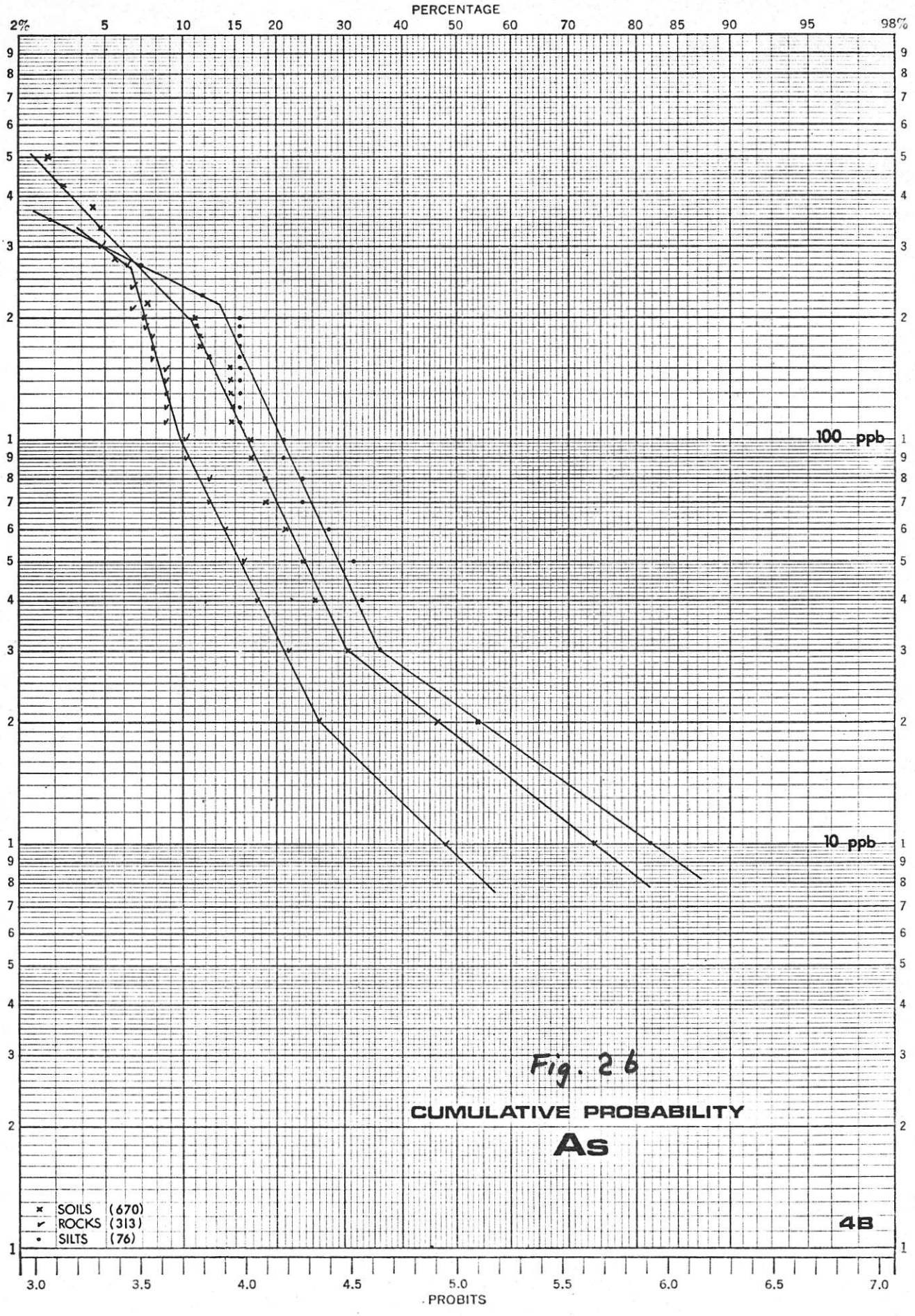

Fig. 26

CUMULATIVE PROBABILITY

As

4B

PROBABILITY
X 3 LOG CYCLES
KEUFFEL & ESSER CO.
MADE IN U.S.A.
46 8080

V PROPERTIES

1 - Asp Mineral Claim

The Asp mineral claim, comprised of 20 contiguous units, is located in NTS map area 92-J-14(E) at Latitude 50°57'N and Longitude 123°02'W. The claim is situated on a steep, densely-forested, north-facing slope of a long ridge known as the Leckie Mountains. At its northern extremity, the claim is bounded by Leckie Creek and on the south it straddles the above-mentioned ridge.

The southern third of the Asp mineral claim is underlain by two distinct intrusive units. The older is a medium-grained, massive to foliated hornblende-biotite granodiorite containing minor dioritic and gabbroic phases. The younger is a massive, medium to coarse-grained pink biotite granite. The northern part of the claim is almost entirely overburden covered, but numerous scattered outcrops indicate that it is underlain by thinly-bedded, dark grey argillaceous and tuffaceous beds probably stratigraphically related to the Jurassic Relay Mountain Group. Several occurrences of malachite were noted in small shears in the intrusive rocks, but no significant alteration was observed. The majority of outcrops of the sedimentary rocks are highly fractured and silicified; they have northerly strikes and steep westerly dips and in several places are cut by dykes of quartz diorite. At several localities extremely fine-grained disseminations of pyrite and arsenopyrite

were observed.

The property has been known since the 1920's as the Native Son showing. It has not been worked since 1924 when five short adits were driven and several open cuts made on a heavily mineralized zone located on a tributary of Leckie Creek near the centre of the claim. The mineralized zone consists of several pods of massive arsenopyrite and pyrite and contains minor amounts of pyrrhotite and chalcopyrite. The zone is approximately 300 feet wide; outcropping mineralization is restricted to the east side of the tributary and the southern limit of the zone is marked by a narrow horn-felsic zone containing as much as 1% disseminated arsenopyrite.

The property initially attracted attention when a literature search encountered a reference to old assays which reported low gold values both in the massive sulphide ore and in the surrounding disseminated arsenopyrite. The first reconnaissance traverse done over the property located disseminated arsenopyrite in sediments outcropping more than 1,000 feet west of the old workings, and a much larger extent of disseminated pyrite. The Asp mineral claim was staked before geochemical analyses were returned due to competetive activity in the area. Soil samples were subsequently taken along claim lines forming the eastern and western perimeters of the claim in an attempt to delimit any further extent of the disseminated mineral-

ization. Assay results from these samples and more detailed sampling done in the vicinity of the old workings have not been encouraging and the claim should be abandoned if a few additional geochemical traverses also prove to be disappointing.

2 - Connemara and Mousetrouser Mineral Claims

The Connemara and Mousetrouser mineral claims are two adjoining mineral claims comprised of 20 and 12 units, respectively. The claims are located south of Dash Hill in NTS map area 92-O-3(E) at Latitude 51°11'N and Longitude 123°06'W.

The claims are underlain by rusty-weathering sandstones and greywackes of LKS Unit and black shales and quartz pebble conglomerate of the Taylor Creek Group. Outcrops are scarce, the claims being situated on a high upland plateau characterized locally by smoothly rounded hills rising approximately 1,000 feet above the valley floor. The claims lie across Graveyard Creek (so named for an Indian burial ground located within the claim block) and range from 6,000 to 7,500 feet in elevation. Vegetation consists mainly of alpine grasses and scattered thickets of balsam although trees of 18" diameter grow on the valley floor.

The area initially attracted attention in 1974 when twenty scattered reconnaissance samples indicated a somewhat erratic pattern of anomalous Au, As, and Hg

values. Geochemical results from traverses done during the 1975 season indicated that the anomalous trend extends northwestward to the other side of Graveyard Creek. The anomalous area is almost entirely overburden covered with the exception of the summit of a low hill located in the northeastern sector of the claim group, where highly-fractured and sheared, rusty-weathering, carbonatized sandstones outcrop across a fault zone. Several talus fragments of maesive arsenopyrite were found near the base of the mountain on the opposite side of Graveyard Creek, approximately on strike with the anomalous trend, suggesting a fairly extensive zone of mineralization. The claims certainly warrant a more detailed and systematic geochemical and geological investigation, but it seems unlikely that the underlying sandstones may host a large replacement type deposit. Further work may well prove that the large and somewhat erratic anomalous zone is caused by a series of several veins striking northwesterly across the property.

V I CONCLUSIONS AND RECOMMENDATIONS

The 1975 reconnaissance did not outline any new zones of economic interest comparable to the discoveries in the Eldorado Mountain area, made during the 1974 season. However, it was successful in its primary objective of rapidly assessing the economic potential of a large area at minimal cost and effort. The Connemara and Mousetrouser mineral claims were acquired in response to favorable geechemical results which have outlined a sizeable extension to the northeast of the Au-As-Hg anomaly discovered in the previous season. Extensive overburden cover will present problems in the exploration of the property, but the coincidence of anomalous Au and As values is a significant factor in recommending further work in the area. Detailed, systematic geological and geochemical work should be done on the property in the 1976 season. The same cannot be said for the Asp mineral claim, which was staked mainly to ensure the protection of company interests in the face of competetive activity in the area. It is recommended that a few more widely spaced geochemical traverses be done over the property and if these results are unfavorable the claim should be abandoned.

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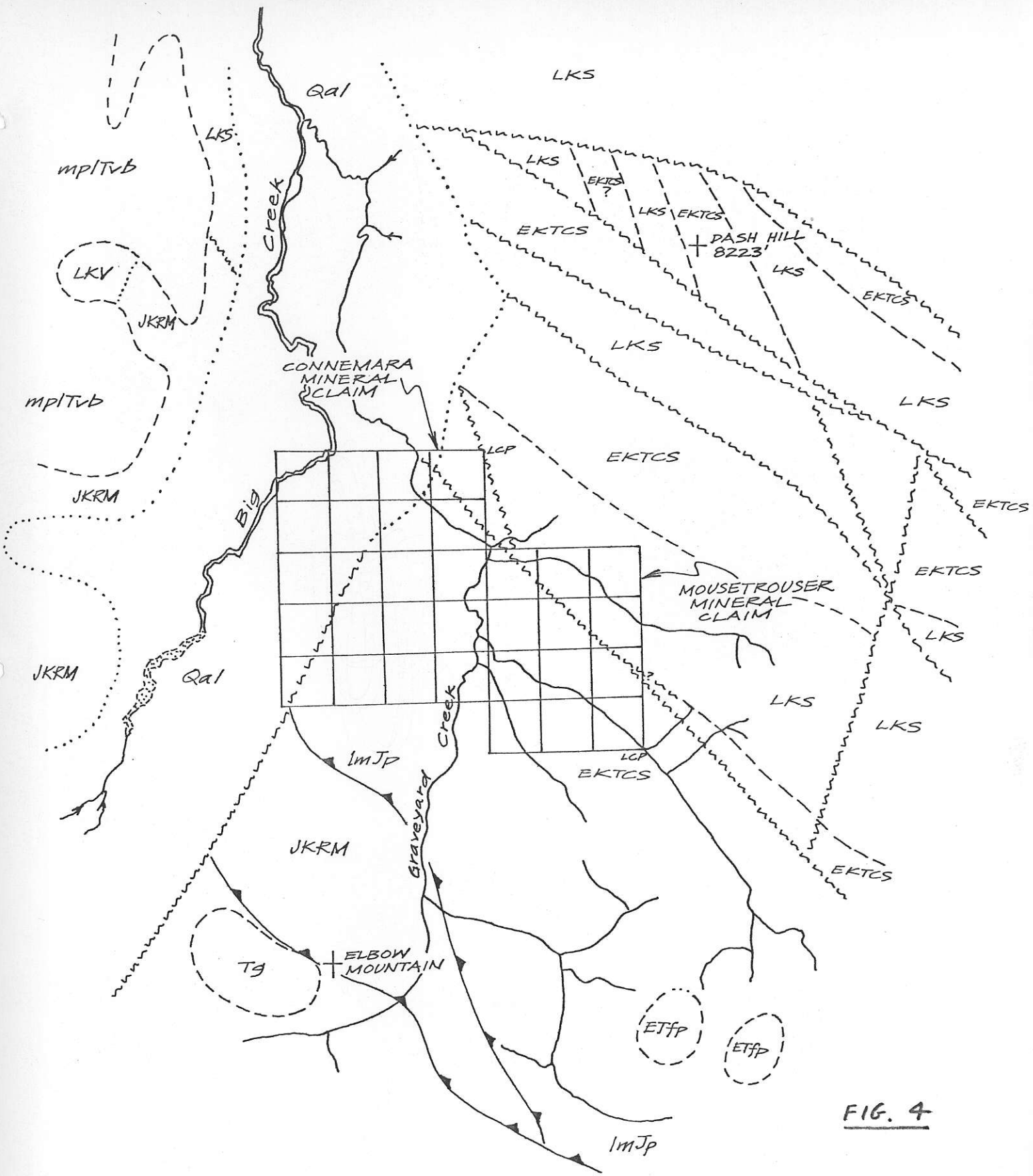

FIG. 4

C439 GOLD RECONNAISSANCE
CONNEMARA & MOUSETROUSER CLAIMS
NTS 92-O-3E LAT. 51°11'N., LONG. 123°06'W.
SCALE 1:50,000

Nov. 75