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MAPS IN FOLDER

104G | 7W + 6E

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REPORT ON GEOLOGY

SCHAFT CREEK

INTRODUCTION

On August 25, 1964 a camp was established on Schaft Creek, less than one mile from its intersection with Hickman Creek. The intention was to obtain a regional assessment of the geology, and especially to attempt to map the distribution of the various showings which were known to exist, along with any clues as to their inter-relationships. In addition, a series of trenches were to be cut in a mineralized zone of shearing on the intrusive contact about 1/2 mile east of camp, on the SNO group of claims.

The claim groups in the region covered are:

1. The "BUD" group, staked as part of the Silver Standard AS&R combined Scud project in June 1964 and September 1964.

2. The "SNO" group, staked for the BIK Syndicate in May 1964.

3. The "BIRD" group, staked in 1957, also for BIK.

Refer to figures 1 and 2 for details of location. The BUD and SNO claims have not been surveyed and have been plotted from air photo features. The BIRD claims have been surveyed.

This program was completed in about three weeks, aided by near perfect weather conditions which followed an abnormally wet, cold summer. The results and conclusions follow.

TRENCHING

Trenching on the SNO claims commenced August 26th and continued without serious interruption until September 10th at which time a total of 503 feet of trenches had been cut, 405 feet of this footage in bedrock, nearly all of which required blasting. The results are outlined on figure 4.

GEOLOGY

A series of 8 traverses covered the area outlined in figure 2 resulted in the following data, which is illustrated in figure 3.

There are two main rock types in the claim area. The first of these is an intrusive stock extending from Hickman Creek on the east for a distance of about 12 miles to the southwest, occupying the Hickman complex of mountains. The second is a complex of Triassic sediments and volcanics; the latter predominating in the region concerned.

In the Schaft-Hickman area the contact between these types trends generally due north for some distance. The contact is well exposed in only one place in the Hickman Canyon, whose p recipitous nature makes examination difficult, and in the trenches, noteably T1 and T2. A considerable mixing of the types is a feature of the contact. Inclusions are often rounded or lens-shaped indicating a plastic state of intrusion, but chilling effects or extensive replacement are not evident.

The stock, which was traversed on the ridge paralleling Hickman Creek to the west, was mainly a diorite, grading through a granodiorite and quartz monzonite to a true granite east of Hickman Creek. The diorite frequently shows a layering, with a concentration of mafics forming bands of fine-grained hornblendite or pyroxenite. Frequent sparsely pyritized andesite dykes and

occasional thin orthoclase-quartz pegmatites trend across this banding. The acid stock is characterized by pink orthoclase and green mafics.

The most common rock in the Triassic complex is an andesite flow. Augite and plagioclase porphyries are common and cloudy breccia fragments are sometimes evident. Basalts occur in the upper Wolverine Canyon and further adjoin a thick series of hematized tuffs, which give the ridge to the east its conspicuous red colouration. Steeply dipping pyroclastics strike east-west and are not observed on strike to the west, suggesting an unconformity. Higher up on the ridge lies a complexly deformed sequence of basalts and conglomerates with lensy limestone fragments and dark volcanic pebbles, and buff coloured limey tuffs.

Various dyke-like structures were noted but were not included in figure 3. Three main types were immediately apparent.

1. A quartz-biotite lamprophyre, the typical example at the out-cropping of the contact in Hickman Canyon, trending northwest. The quartz and biotite is sparse in an andesite matrix.

2. An andesite porphyry, especially well-exposed on the BIRD showing commonly trending due north.

3. A fine to medium grained granite or monzonite prevalent just south of Wolverine Creek, the contact is usually gradational with minor pyritization of the adjoining volcanics. A pyritized buff rhyolite of perhaps 150 feet, brecciated where it contacts the greenstone-andesite volcanics in the upper Wolverine Canyon was mapped as a flow but could be a dyke form.

Shearing is common throughout the region and the major structures are shown on figure 3. Noted especially was a fault zone of regional extent, first encountered in the upper Wolverine Canyon

and forming a series of siliceous pyritized breccias dipping steeply southeast. What is thought to be the same zone is encountered again to the north where it is conspicuous as an extensive gossan up to 150 feet wide trending slightly east of north along the hillside. The sense or displacement was not determined.

Of particular interest is what is probably the remnant course of Wolverine Creek. This is displayed now as a ravine whose basin is about 35 feet above Hickman Creek's present level at their junction; this depth representing the erosion of Hickman Creek since the northerly re-routing of Wolverine Creek. Only a trickle of spring water now drains this ravine although well rounded boulders occur in the upper reaches of, and beyond, the ravine. This ravine is significant because the ravine is undoubtedly a fault, whose probably slightly offset continuation can be seen across Hickman to the west. The fault strikes easterly towards the contact and may have fractured and altered the volcanics near the contact (which is not exposed) to provide favourable mineralizing conditions.

In a near surface talus immediately southwest of the BIRD showing, a coarse quartz cemented breccia is exposed. There is sufficient rock to indicate that this may be of regional importance.

The high angle serpentinized shears in the trenches may be related to the intrusion, but nothing is known of their extent.

The volcanics are a complexly folded unit but insufficient data does not permit analysis at this time. The complexity is indicated by the widely varying attitudes which appear to be bedding. Just south of the contact-Hickman Canyon intersection the flaws are semi-schistose. The sediments in the southeast map area are dragged and sheared.

The mineralized and severely fractured flows which comprise the BIRD showing are thought to represent an older series, underlying younger, more competent rocks which form the ridges north and south of the pass (D.Barr/59). No further enlightenment on this problem is forthcoming from the season's cursory examinations. The only other extensive occurrence of such banded felsite in the area is immediately east of Hickman Creek on the southern BUD claims.

Hydrothermal alteration in shears and fractures, especially near the contact exposed in the trenches gives calcite, quartz-epidote, chlorite, and serpentine, and rarely siderite and sericite in stringers and as a breccia matrix. Serpentine and chlorite alteration of the granite mafics is common.

Quartz-sericite-pyrite alteration forms gossans on the north-south fault breccias north of Wolverine Creek and in the upper Wolverine Canyon, as well as on the felsites just east of the upper Hickman canyon. Otherwise, pyritization of the andesites is weak and sporadic. Pyritization of the main stock is unknown but some near surface granite talus to the east of the trenches, probably representing small intrusive plugs, shows disseminated pyrite.

Chalcopyrite, with minor bornite, was observed as extensive replacements only in the closely fractured felsites of the BIRD showing. Otherwise chalcopyrite occurs locally:

1. In shears exposed in the trenches and in the upper Wolverine Canyon showing, associated with quartz-epidote and chlorite alteration;

2. With bornite in joint and fracture fillings in the lower Hickman Canyon. These fractures are widely spaced and no replacement beyond an inch or so from

the joint planes was noted. These planes are exposed as the walls of the lower Hickman Canyon whose appearance tends to exaggerate the extent of mineralization.

3. Accompanying minor felspathization of phenocrysts in andesite xenoliths near the contact in Hickman Canyon.

4. Sporadically in the fault zone north of the upper Wolverine Canyon.

CONCLUSIONS

The competence factor is probably the most important ore control and ore is most likely associated with the close fracturing of the brittle felsites. The extensive area without exposure to the south of the BIRD showing, extending to the gravel overburden between the upper and lower Wolverine Canyons and the ravine mentioned above, is very important since the BIRD showing is open to the south and the apparent bedding is striking roughly south. There is no reason to consider any of the intrusive rock as a host for an extensive disseminated copper deposit.

RECOMMENDATIONS

A geophysical program, especially I.P., with the BIRD showing as background control, should be carried out over the area indicated on figure 3 as "E". A drill program should be started on the BIRD showing and progress south as accumulating drill and geophysical data suggests. Hence no stripping on the BUD group is recommended until more is known of the ore controls, but the claims should be kept in good standing pending such data. In addition, regional geological mapping south of the BUD group could give additional useful data, and should be carried out. These recommendations disregard the claim ownership factors but it is obvious that the three claim groups should be combined for most effective exploration.

* * * * * * * * * * *

October 16, 1964.

EVIDENCE OF EXPENDITURE INCURRED

SALARIES

H. Naylor	Aug 25 to Sept 13	@ $550.00/mo = $	385.00
T. Buckham	Aug 25 to Sept 13	@ $375.00/mo =	262.50
W. Dunn	6 days	@ $35.00/day =	210.00
		$	857.50

OTHER DIRECT COSTS

Living Expense		$	672.50
Helicopter Costs	22 hrs	@ $130.00/hr =	2,470.00
		$	3,142.50

TOTAL COSTS $ 4,000.00

January 14, 1965

Certified Correct

W. St.C. Dunn
Supt. of Exploration

SWORN TO AND SUBSCRIBED
AT VANCOUVER THIS 15 DAY
OF JANUARY, 1965 BEFORE ME:

M J Brown
Sub-Mining Recorder

STATEMENT OF QUALIFICATIONS

H. H. R. NAYLOR

Graduated U.B.C. 1962 B.Sc.

Major - Geology and Physics

SCHAFT CREEK

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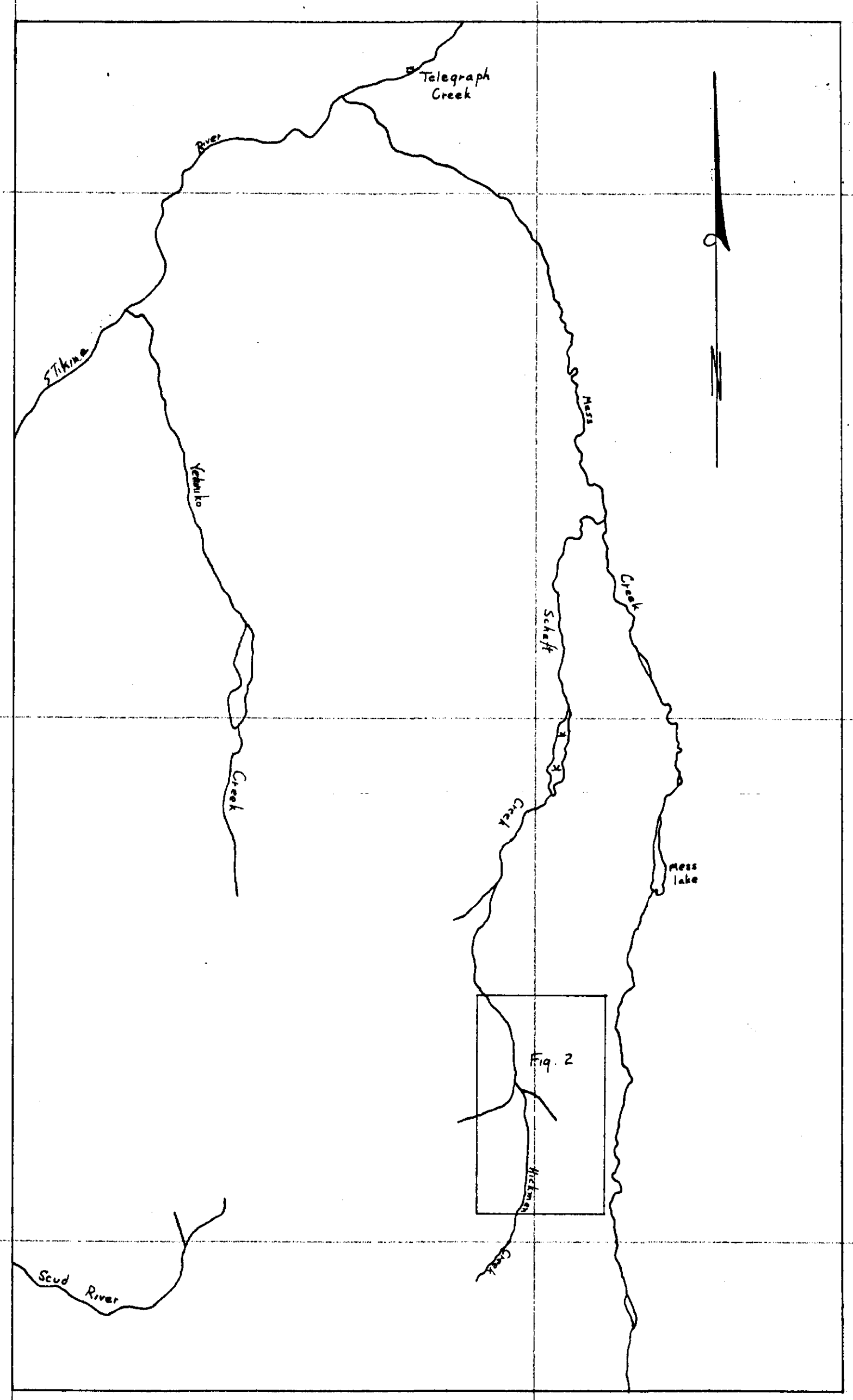


Location Map

Fig 1

Scale 1" = 4 miles

To accompany geological report Oct. 16 1964

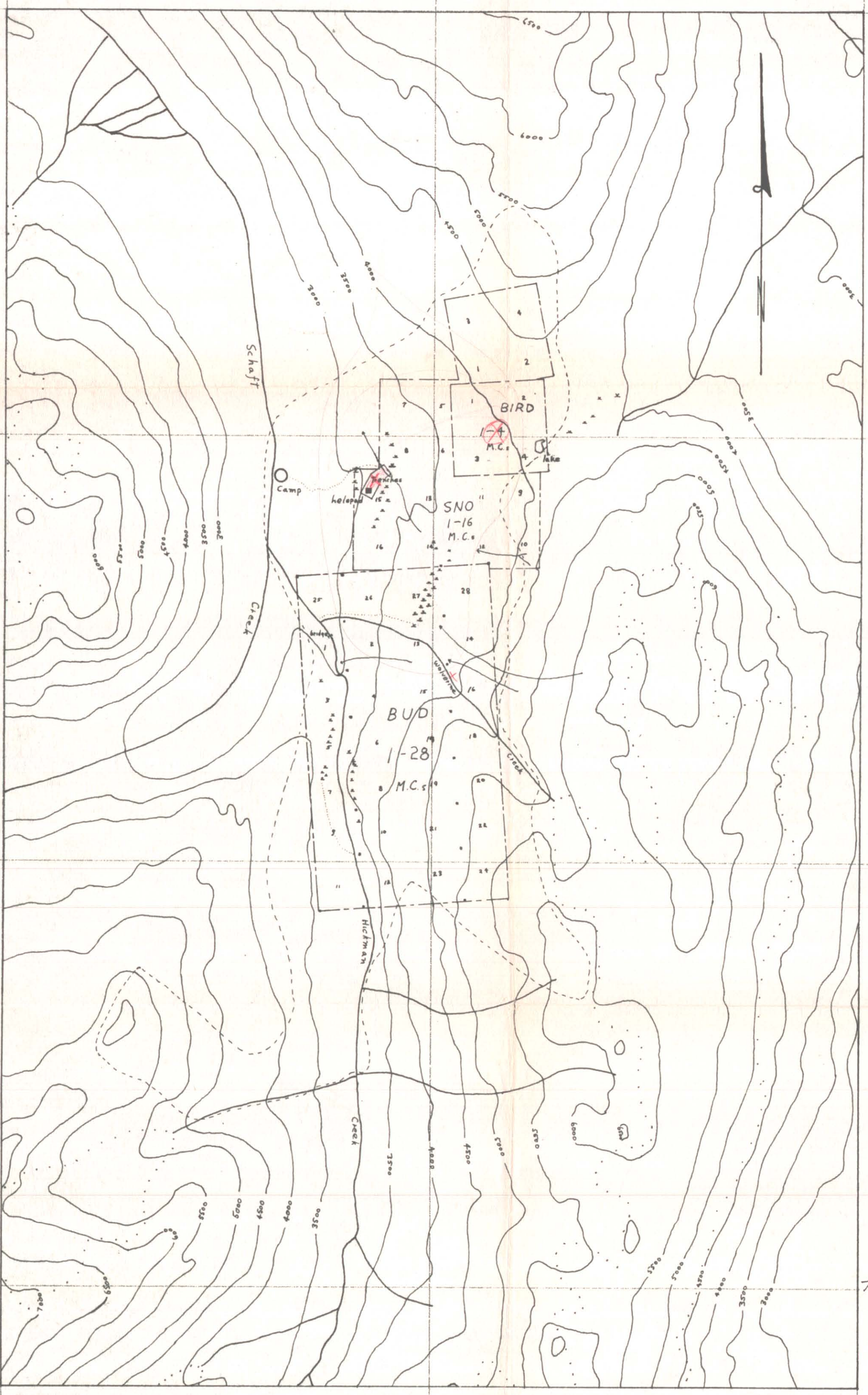
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 588 MAP 1

MT

SCHAFT CREEK

FIG. 2



Showing: Location of 1964 exploration program & topographic features

Topographic detail traced from 8X blow up of 4 mile national topo. series, Telegraph Creek

Legend

contour (interval - 500ft) — 4000 —
extent of geological traverses ----------
limit of snowfields . . . . . .
trail
boundary of claim group (not yet surveyed) — — — —
swamp

Scale: 1 inch = ½ mile

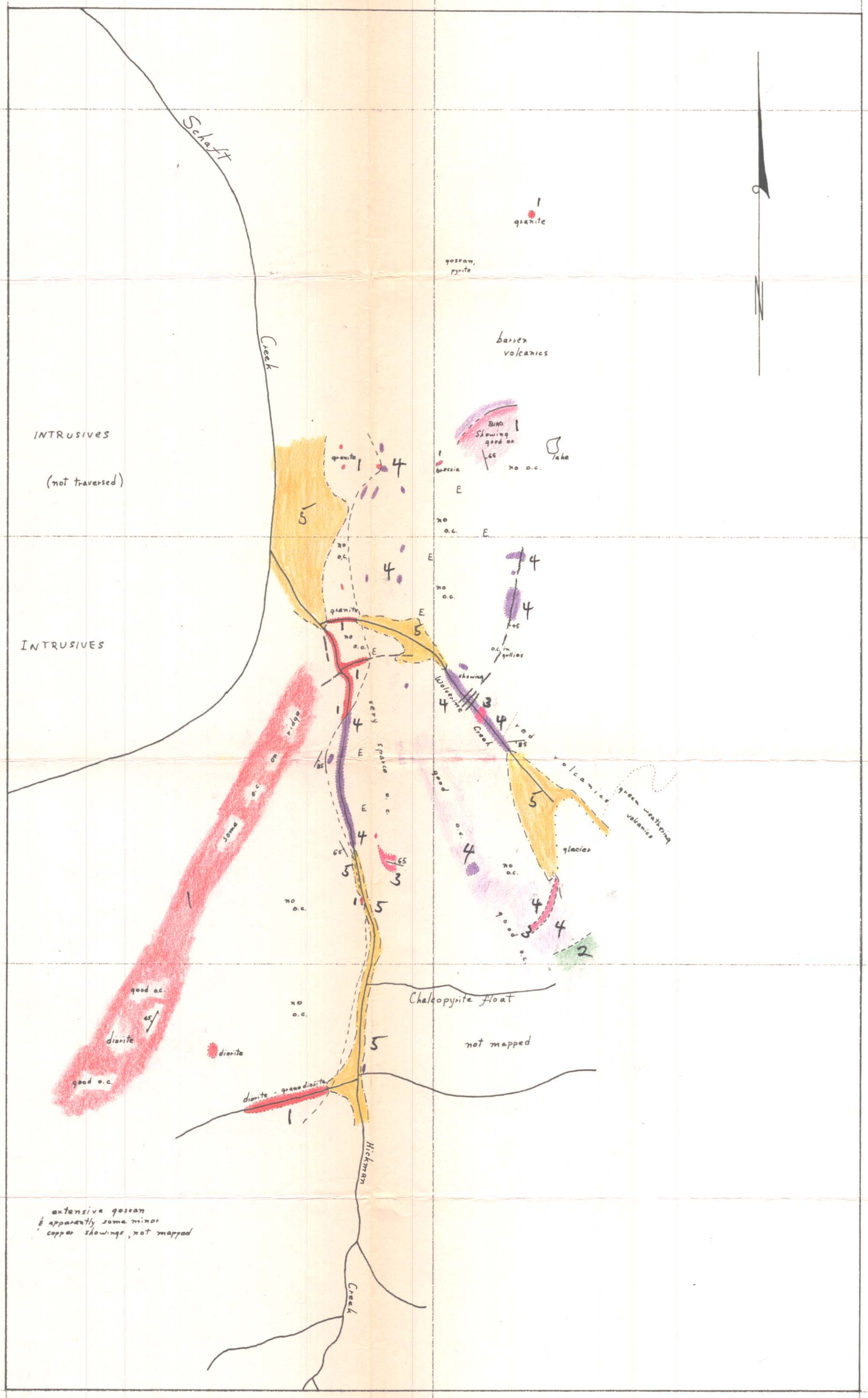
Drawn by: H. Naylor

Sept. 1964

To accompany geological report of Oct. 16 1964

SCHAFT CREEK

GEOLOGY Fig. 3



KEY

Recent glacial & stream alluvium	5
Triassic: Mostly andesites some porphyritic	4
Triassic: Felsitic flows	3
Triassic: Derived Sediments	2
Intrusives	1
Probable flow bedding	⟋
Area recommended for further exploration	E

Scale : 1 inch = ½ mile

Drawn by H. Naylor

Sept. 1964

To accompany geological report Oct. 16 1964

TRENCHING - SNO CLAIMS

FIG 4

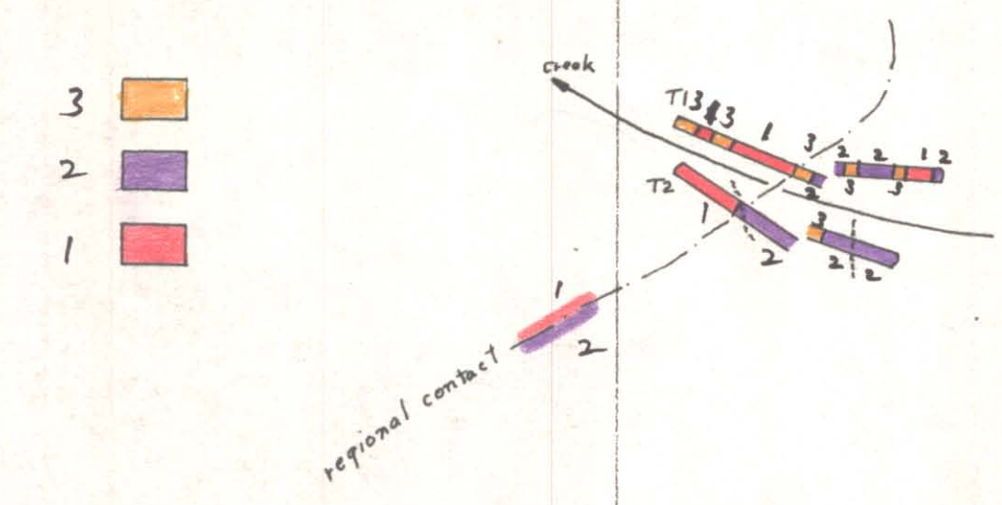
(M4)

KEY

Overburden 3

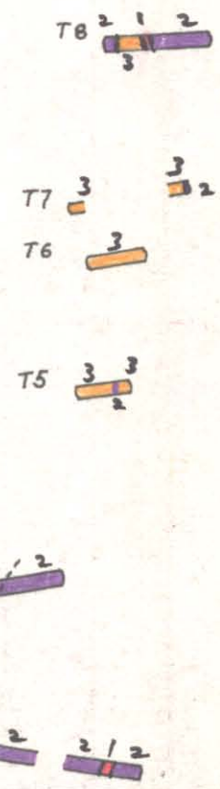
Altered Volcanics 2

Granite 1



Assay Plan

Location		Width	Cu	Au	Ag
T1	109½-114½' E	5'	0.63	0.01	0.1
	114½-120' E	5½'	0.90	0.01	0.1
	120 -140' E	20'	0.03	0.01	tr
T2	37 - 53' E	16'	0.14	tr	tr
	106 - 112½' E	6½'	0.40	tr	tr
T3	East end grab		tr	tr	tr
	West end grab		tr	tr	tr
T4	26 - 37' E	11'	0.24	tr	tr
	at 37' E	3"	8.39	tr	0.2
	37' - 46' E	9'	0.16	tr	tr
T8	4 - 6' E	2'	0.42	tr	tr
	20 - 24' E	4'	0.49	0.02	tr



Scale 1" = 100ft

Sept. 1964

To accompany geological report Oct. 16, 1964