

MAR 19690044: NORTHEASTERN ALBERTA

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ECONOMIC MINERALS
FILE REPORT No.
U-AF-084(2)
U-AF-085(2)
U-AF-086(2)
U-AF-087(2)

EXPLORATION REPORT ON QUARTZ MINERAL PERMITS

128, 129, 130 & 131

IN THE PROVINCE OF ALBERTA

for

DOLPHIN EXPLORATIONS LTD

1155 W. Pender Street,
Vancouver, B.C.

by

John Greig and Anthony Rich

Department of Geology
University of Alberta
Edmonton, Alberta.

November 28, 1969.

This is Exhibit "C" referred to in the affidavit of M.BARRY NEEDHAM
sworn to before me at VANCOUVER in the Province of British Columbia
this 18th day of December, 1969



(H.RIDGWAY) A Notary Public in and for the
Province of British Columbia

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INDEXING DOCUMENT NOS. 700152

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SUMMARY:

The property of Dolphin Explorations Ltd was acquired to cover structures believed to be geologically favourable for the localization of uranium deposits (Ref. Geological Report - Dolphin Explorations - May 1969). Exploration was directed primarily toward the search for uranium.

The property consisting of permits 128, 129, 130 and 131, is located in the Northeast Corner of Alberta, and comprises a total of 148,960 acres. Prospecting was carried out in July 1969. One showing of significant radioactivity was discovered and this is located on the north side of Darwin Lake. A surface sample from this showing assayed only 0.025% U_3O_8 radiometric and 0.003% U_3O_8 chemical. No other significant radioactive occurrences were found. Results have proved discouraging, and it is not deemed feasible to conduct further exploration on the property.

THE PROPERTIES AND THEIR LOCATION:

Quartz Mineral Exploration Permits 128, 129, 130 and 131 are situated in the Northeast Corner of Alberta. The permits have areas of 17, 61, 77 and 77.75 square miles respectively. The total area is 148,960 acres. The permits were taken to cover favourable structures in an area where uranium and other mineralization is likely to occur.

The permits lie about 35 miles northeast of Fort Chipewyan, between Lake Athabasca and the Slave River. The permits are at a latitude of about $59^{\circ} 15' N$ and a longitude of $111^{\circ} 00' W$.

Numerous lakes in each of the permit areas provide easy access to float equipped aircraft based in Uranium City, 80 miles to the east. Much of the property was found to be easily accessible by foot from the shores of Darwin Lake and Ryan Lake.

EXPLORATION PROGRAM:

The property was prospected during the period July 5 to July 27 by A. MacKillop and A. Lambert, two prospectors employed by Spartan Explorations Ltd. This work was carried out under the supervision of geologists A. Rich and J. Greig, who were retained as consultants for this project. Rich and Greig accompanied the prospectors in the field on July 5th and 6th for the purpose of providing preliminary geological orientation.

The first camp was established at Darwin Lake. Traverses were made through a large area surrounding Darwin Lake and a smaller lake situated about 1 mile to the east of Darwin Lake. Camp was moved on July 14th to Ryan Lake, which is about 7 and 1/2 miles long and is located about 9 miles to the south of Darwin Lake. Numerous traverses were run from the shores of the lake. Because of the length of Ryan Lake, a large area is accessible from it. The shore lines of both lakes were covered by canoe equipped with outboard motor. Scintillometers were carried by the prospectors at all times. Traverse locations are shown on the map accompanying this report.

GEOLOGY:

In general the regional lithologies were found to agree well with the regional mapping by Riley¹, with the exception of the ground covered south of Ryan Lake and Northeast of Darwin Lake, the area was found to be underlain by a fine to medium grained, equigranular, in part garnetiferous, pink and grey granite. South of Ryan Lake the lithology changes to a feldspar-quartz-biotite granite. Northeast of Darwin Lake the granite is compositionally similar, except here it is porphyritic and porphyroblastic and locally foliated.

There exist at least two ages of faulting. The earliest faulting is characterized by the development of mylonites. Only one of these early faults was seen in the field, and this was on the north side of Darwin Lake (see sketch map). This fault strikes ENE. Individual mylonite bands are about 3 to 25 feet in thickness and the mylonite zone occurs over a width of about 500 feet. The mylonite zone does not show as a lineation on aerial photographs. The later faults are numerous and strike between ENE and ESE. These later faults correspond to the prominent lineations mapped from aerial photographs by Godfrey². Where observed these later faults are not found to be mylonized. The geology as compiled by Riley and Godfrey is given on the accompanying map.

RESULTS OF EXPLORATION:

The results of the prospecting have generally proved disappointing. One zone of significant radioactivity, which extends over a considerable area, was found on the north side of Darwin Lake. This showing was mapped by pace and compass and the results are given on the sketch map. The radioactive showing parallels a mylonite band (previously mentioned) and there is a suggestion that the radioactivity is

stronger where these mylonites are cut by a younger ESE striking fault. One surface sample was analysed and we believe this sample to be representative of the more strongly radioactive material. This assayed 0.025% U_3O_8 radiometric and 0.003% U_3O_8 chemical (Crest Laboratories Ltd. -Certificate of Assay attached). This sample was not analyzed for thorium, however we believe the difference between the radiometric and chemical assays is most likely accounted for by the presence of thorium.

Results of the prospecting in the remainder of the area proved disappointing. In his final report, A. MacKillop states that throughout the remainder of the property "no readings were detected on any traverses to be regarded as significant".

CONCLUSIONS AND RECOMMENDATIONS:

The area prospected is lithologically quite uniform, and is underlain mainly by granite. A mylonite zone was observed on the north side of Darwin Lake. This mylonite is believed to be an early fault. Later faulting is common throughout the area. Only one showing of significant radioactivity was found, and this is spatially related to the mylonite zone. A surface sample representative of the more strongly radioactive material assayed only 0.003% U_3O_8 chemical.

In consultation with the directors of Dolphin Explorations Ltd, it is not considered feasible to continue with further exploration on the property.

REFERENCES:

1. Rich. A. and Greig, J.A., (May 1969), Geological Report on Permits 128, 129, 130 and 131 in the Northeast Corner of Alberta for Dolphin Explorations.
2. Riley, G.C., (1960), Geology, Fort Fitzgerald, Alberta. Geol. Surv. of Can., Map 12-1960.
3. Godfrey, J.D., (1958); Precambrian Shield Structures North of Lake Athabasca, Alberta; Res. Counc. of Alberta; Contrib. No. 89.

CERTIFICATE

I, John A. Greig, of the City of Edmonton, in the Province of Alberta, hereby declare :-

- 1) That I hold the degree of B.Sc. (Honours Geology) awarded by McGill University, Montreal.
- 2) That I am a graduate student at the University of Alberta, Edmonton, where I am presently completing a Ph.D. program in Geology.

Dated this 28th day of November, 1969 at Edmonton, Alberta.



John A. Greig, B.Sc.

CERTIFICATE

I, Anthony Rich, of the City of Edmonton in the Province of Alberta, hereby declare :-

- 1) That I am a Professional Geologist registered in the Province of Alberta.
- 2) That I am a part-time graduate student at the University of Alberta, Edmonton, where I am presently completing an M.Sc. program in Geology.
- 3) That I hold the degree of B.Sc. (Geophysics) awarded by the University of Alberta, Edmonton.

Dated this 28th day of November, 1969 at Edmonton, Alberta.



Anthony Rich, B.Sc., P.Geol.

CREST LABORATORIES LTD.

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PHONE 469-2391

CREST LABORATORIES (B.C.) LTD.
1068 HOMER STREET
VANCOUVER 3, B.C.
PHONE 689-8586

CERTIFICATE OF ASSAY

TO Integral Explorations,
Suite 207 - 10405 Saskatchewan Drive,
Edmonton, Alberta.

Lab No. 290

July 16, 1969.

I hereby certify THAT THE FOLLOWING ARE THE RESULTS OF ASSAYS MADE BY US UPON THE HEREIN DESCRIBED SAMPLES.

MARKED	GOLD		SILVER	U ⁰ ₃₈ Radiometric		U ⁰ ₃₈ Chemical		Percent	Percent	Percent	TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent				
Snap 2-U				0.025		0.003					

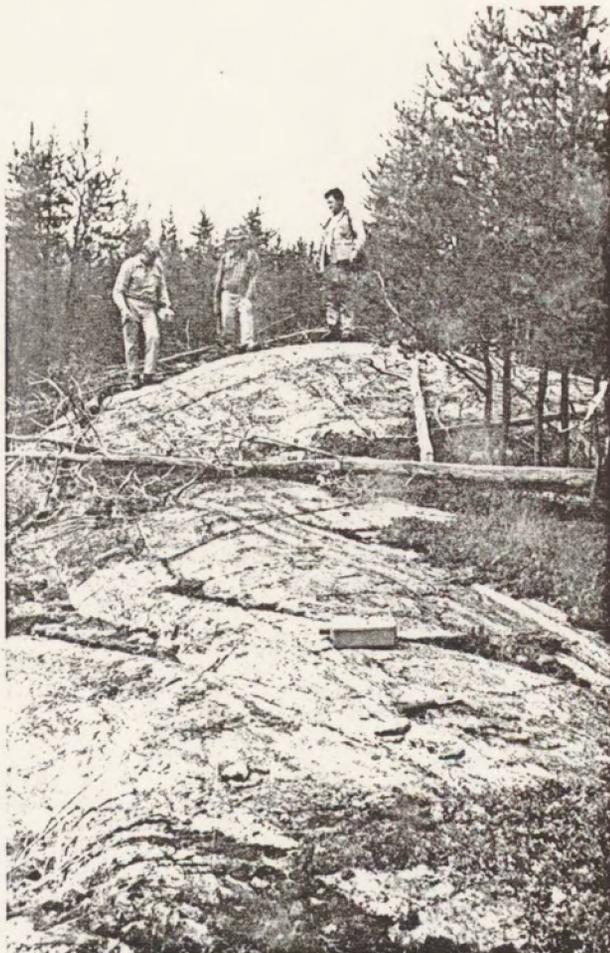
NOTE:
Rejects retained one month.
Pulps retained three months
unless otherwise arranged.

Gold calculated at \$..... per ounce

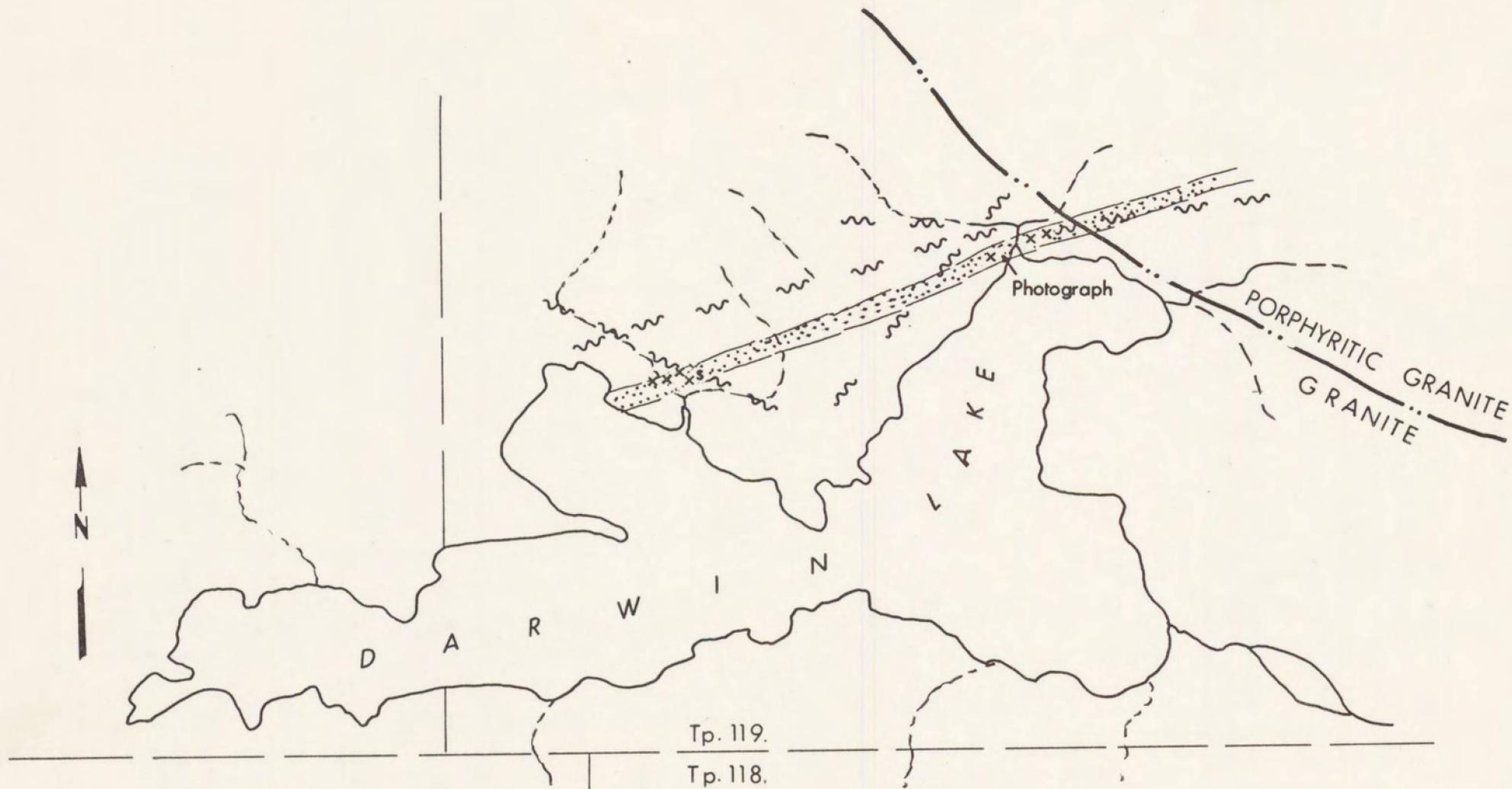


Registered Assayer, Province of British Columbia

Figure 1
19690044



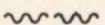
· Mylonites North of Darwin Lake - view looking west.
L to R, John Greig, Al MacKillop, Archie Lambert.
Photo July 5, 1969.



Key.

Scale 1" = 0.4 miles

 Mylonite belt

 Fault

 Radioactivity

 Location of assayed sample

R.7. R.6.

Tp. 119.

Tp. 118.

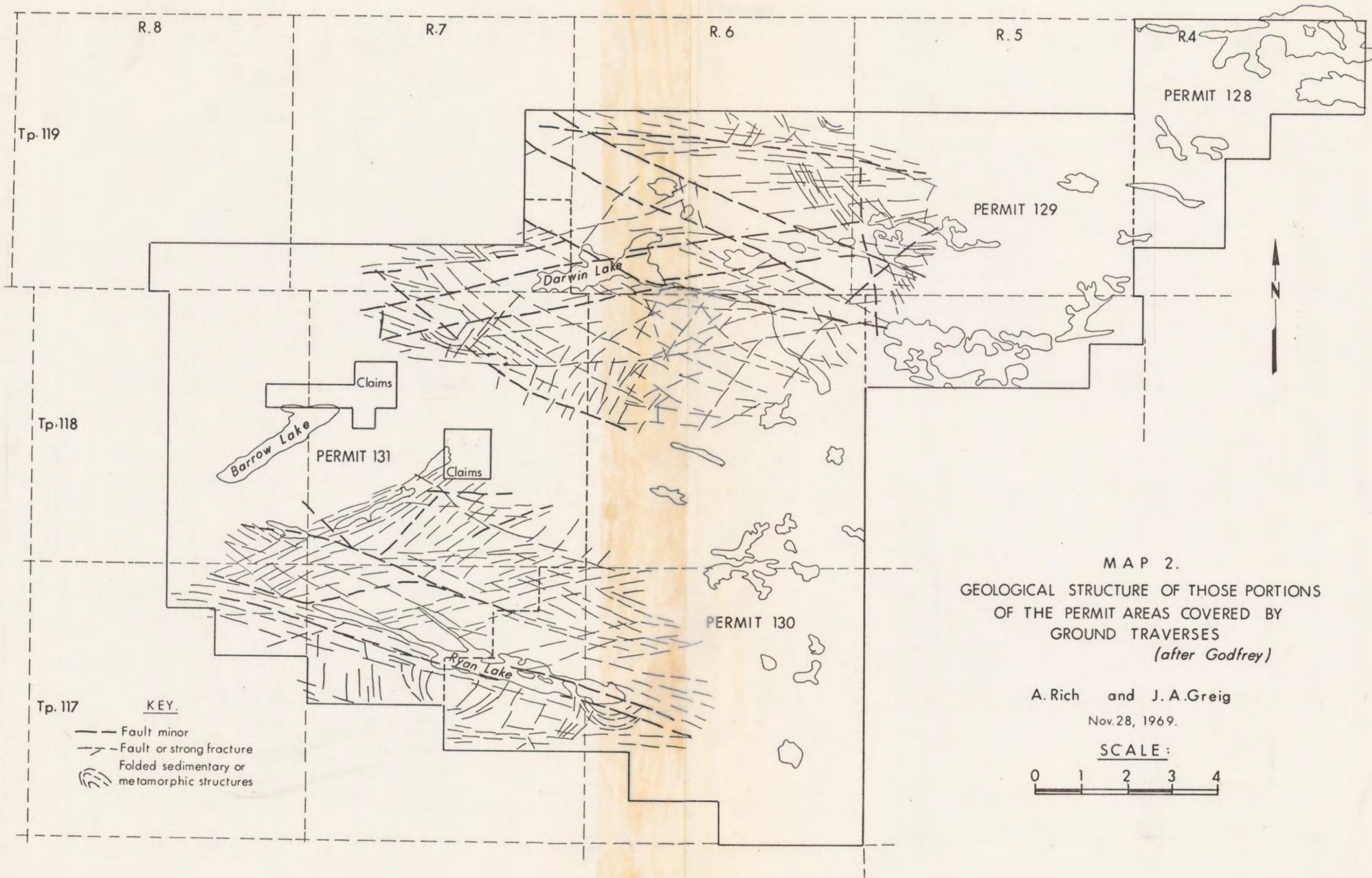
MAP 3.

SKETCH OF THE DARWIN LAKE AREA

A. Rich and J. A. Greig
Nov. 28, 1969.

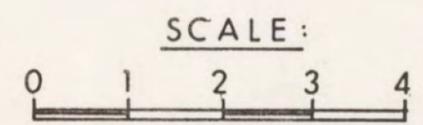
(Permit) 129

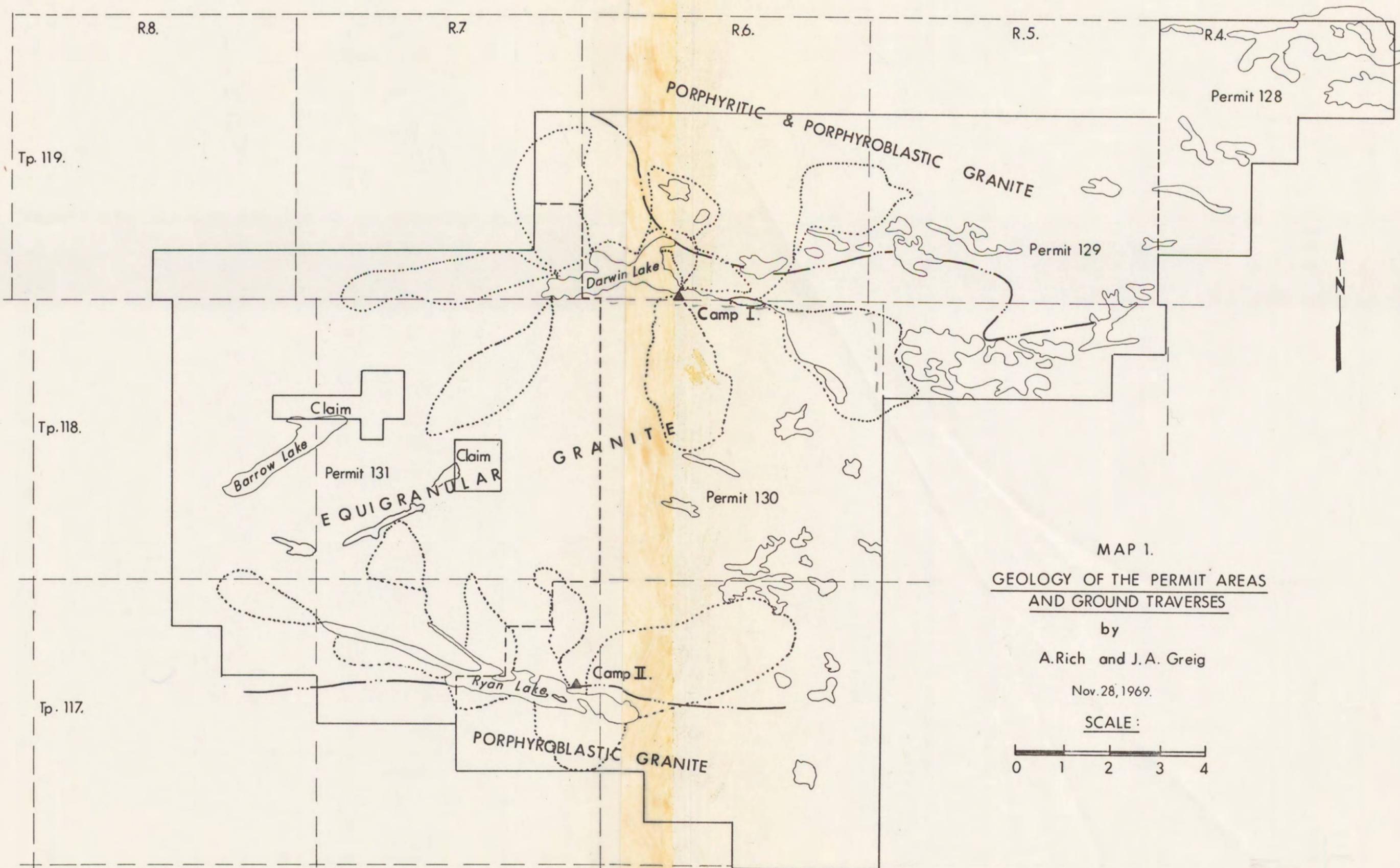
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M A P 2.
 GEOLOGICAL STRUCTURE OF THOSE PORTIONS
 OF THE PERMIT AREAS COVERED BY
 GROUND TRAVERSES
(after Godfrey)

A. Rich and J. A. Greig
 Nov. 28, 1969.





MAP 1.
GEOLOGY OF THE PERMIT AREAS
AND GROUND TRAVERSES

by
 A. Rich and J. A. Greig

Nov. 28, 1969.

SCALE:

