



GREAT PLAINS DEVELOPMENT
COMPANY OF CANADA, LTD.,

GEOLOGICAL AND GEOCHEMICAL
EVALUATION OF THE LAURA CLAIMS
YUKON TERRITORY

132 degrees, 50 minutes West Longitude
65 degrees 05 minutes North Latitude

July to December 1975.



Mayo Mining Division
N.T.S. 106-F-2

B.D. Farion
B.D. Farion, P. Geol.,

070731

INDEX

A. SUMMARY

B. INTRODUCTION

1. Location
2. Property
3. Field Methods
4. Geography

C. GEOLOGY

D. STRUCTURE

E. GEOCHEMISTRY

F. MINERALIZATION

G. CONCLUSIONS

H. RECOMMENDATIONS



This report has been examined by the Geological Evaluation Unit and is recommended to the Council to be considered as representation work in the amount of \$ 5500⁰⁰

5500

W. Sinclair
Acting ~~Resident Mining Engineer~~ or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

A handwritten signature in dark ink, appearing to be "B.R. Baxter".

B.R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

A. SUMMARY

1. Following the recognition of environments favorable to the formation of stratabound lead-zinc deposits, Great Plains conceived of and operated a geochemical reconnaissance program in the Bonnet Plume area of Yukon Territory. The Laura claims, one of several groups staked during the 1975 exploration program will be the subject of this report.

2. The field crew assembled to complete assessment work on the claim group moved to the base camp at Margaret Lake by May 23rd, 1975.

Personnel included:

Bill Farion	Party Chief
Barry Edmonson	Student Geologist
Colin Winter	Geologist
Janet Helton	Student Geologist
Romulo Santos	Student Geologist
John Van der Lee	Geological Assistant
Nigel Lumsden	Geological Assistant
Janet Etzkorn	Cook
Mike Hofuis	Helicopter pilot
Paul Koovisk	Apprentice engineer.

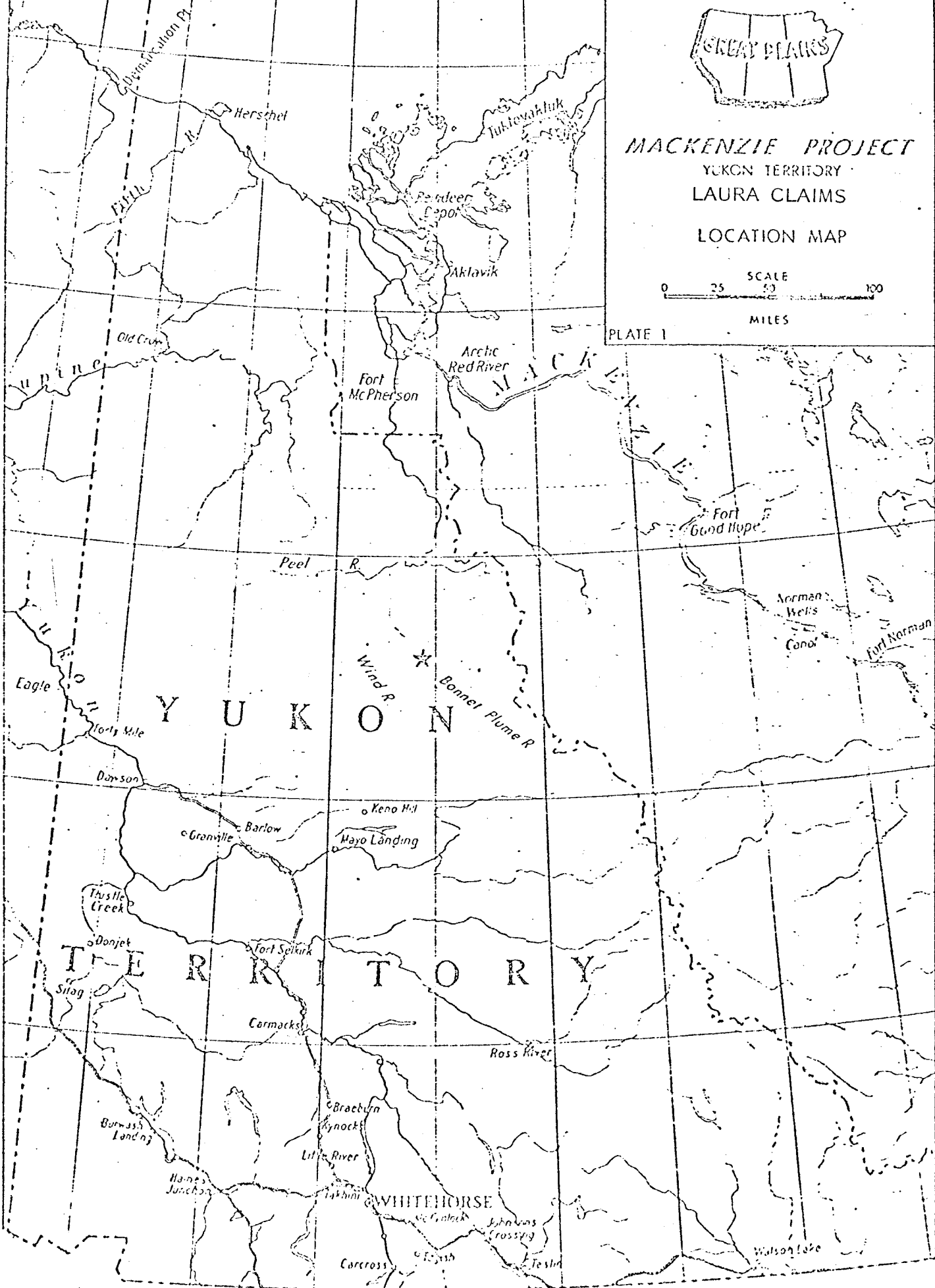
Transwest Helicopters (1965) Ltd., of Burnaby, B.C., supplied a Hughes 500 C helicopter while Trans North Turbo Air supplied fixed wing support from Mayo. Expediting services were provided by Stirling Expediting Services, Mayo and assaying was performed by Barringer Research, Whitehorse.



MACKENZIE PROJECT
YUKON TERRITORY
LAURA CLAIMS
LOCATION MAP



PLATE I



B. INTRODUCTION

1. Location

The LAURA claims are located on a large tributary of the Snake River 52 miles east-southeast of Margaret Lake and 140 miles northeast of Mayo.

2. Property

The property consists of 22 contiguous mineral claims.

<u>Claims</u>	<u>Grant Numbers</u>
LAURA 1-22	Y97742-Y97763

3. Field Methods

A base line was marked on a 200 foot spacing using a Topofil Chain. Lines were turned off by compass and marked on 200 foot intervals with correction for slope. The area was mapped and a geochemical soil survey run using the grid for control.

The zinc spot test, an organic chemical which turns red in contact with the weathering products of zinc sulphides, was used as an aid to mapping. Soil and rock samples taken were sent to Barringer Research in Whitehorse for analysis on Atomic absorption equipment.

4. Geography

The claims are located in an erosional window in a thrust plate of predominantly Rapitan Formation sediments overriding Lower Cambrian sediments. The showing is visible in the cliffs of a river valley (See plates 4 & 5).

C. GEOLOGY

The geology is plotted on a map (Figure 17) at a scale of 200 feet = one inch. Units mapped are described as follows:

Unit 1

The unit consists of crystalline, resistant, dark to medium grey with white strikes (zebra-texture) buff to grey weathering dolomite. Zone of brecciation are marked on the map near the showing. Brecciation is strong, with angular blocks up to two feet in length, and may be fault controlled. Other zones of brecciation exhibit a smaller scale brecciation which may be related to slumping during deposition and lithification. Clasts are up to one inch in length. The zebra texture and the dolomitization would require a flow of

large volumes of fluids during lithification to change the texture and chemistry of the rock. Brecciation and slump structures would probably occur at this time.

Unit 2

The unit consists of a dolomite similar to Unit 1 but is not mineralized and exhibits a wavy bedding pattern. It may be interbedded with and overlies the more massive Unit 1.

Unit 3

The unit consists of flaggy, black crystalline, dull grey weathering dolomite with small vugs and veins filled with white dolomite. Occasional pyrite may be seen in the unit.

Unit 4

The unit consists of dark grey, light grey weathering, fissile to thinly bedded, calcareous shales with interbeds of medium grey crystalline, flaggy (.1 - .5 feet) dolomite.

Unit 5

The unit consists of a calcareous chert-quartz-pebble conglomerate with a calcareous sand matrix. The unit breaks into round knobs or rectangular blocks. Several of the round knobs contain pyrite, marcasite and bornite. Bedding is weak, some preferred orientation is visible and calcite veining is common.

D. STRUCTURE

The beds form a consistent dip slope with strike and dip generally 30 degrees S. 20 degrees. Small folds are visible and plotted on the geology map. The river valley may be controlled by a large fault (vertical or near vertical) although one has not been plotted on recent geology maps. (Snake River G.S.C.). The showing occurs in a window of Lower Cambrian (?) carbonates in a thrust plate of Rapitan Formation sediments.

E. GEOCHEMISTRY

The soil samples were taken on grid lines 200 feet apart and on a spacing of 200 feet. The B horizon was sampled in all cases. The B horizon is poorly developed but is easily distinguished from the organic A horizon.

The mineralized unit is covered by a resistant barren carbonate. As a result the metal values in the soil survey may not reflect actual mineralization.

F. MINERALIZATION

The showing consists of boulders containing pyrite, bornite and sphalerite which have slabbed off the cliffs along the river bank.

Hydrozincite and zinc oxides are prevalent near the #1 claim post of the Laura 1 and 2 claims. Assays over a fifty foot section showed values of 1.1% zinc. An outcrop (near #2 post, Laura 1 and 2, displays the red colors produced by the zinc spot test.

G. CONCLUSIONS

The property is approximately two miles north of the CAB group which was staked by Welcome North in 1974. The breccia is generally covered with the bedded dolomite and only exposed in the cliffs along the river. The negative results in the geochemical soil survey are to be expected, since the barren (Unit 2) unit forms the parent material. The showings are found in the lower unit breccia in the cliffs along the river.

The showing is on strike with the BUH claims where the mineralization is visible in the perimeter of the showing.

Considering that "Mississippi Valley type" deposits occur in pods or plums, the two showing are of interest, and indicate that other showings may be found in the area.

H. RECOMMENDATIONS

The showing should be probed with a "Winkie" drill or equivalent equipment. This would provide a low cost method of deciding future programs. There are several bedrock locations on which a light drill may be set up to drill holes 100 to 130 feet deep and provide sufficient information to warrant the program.

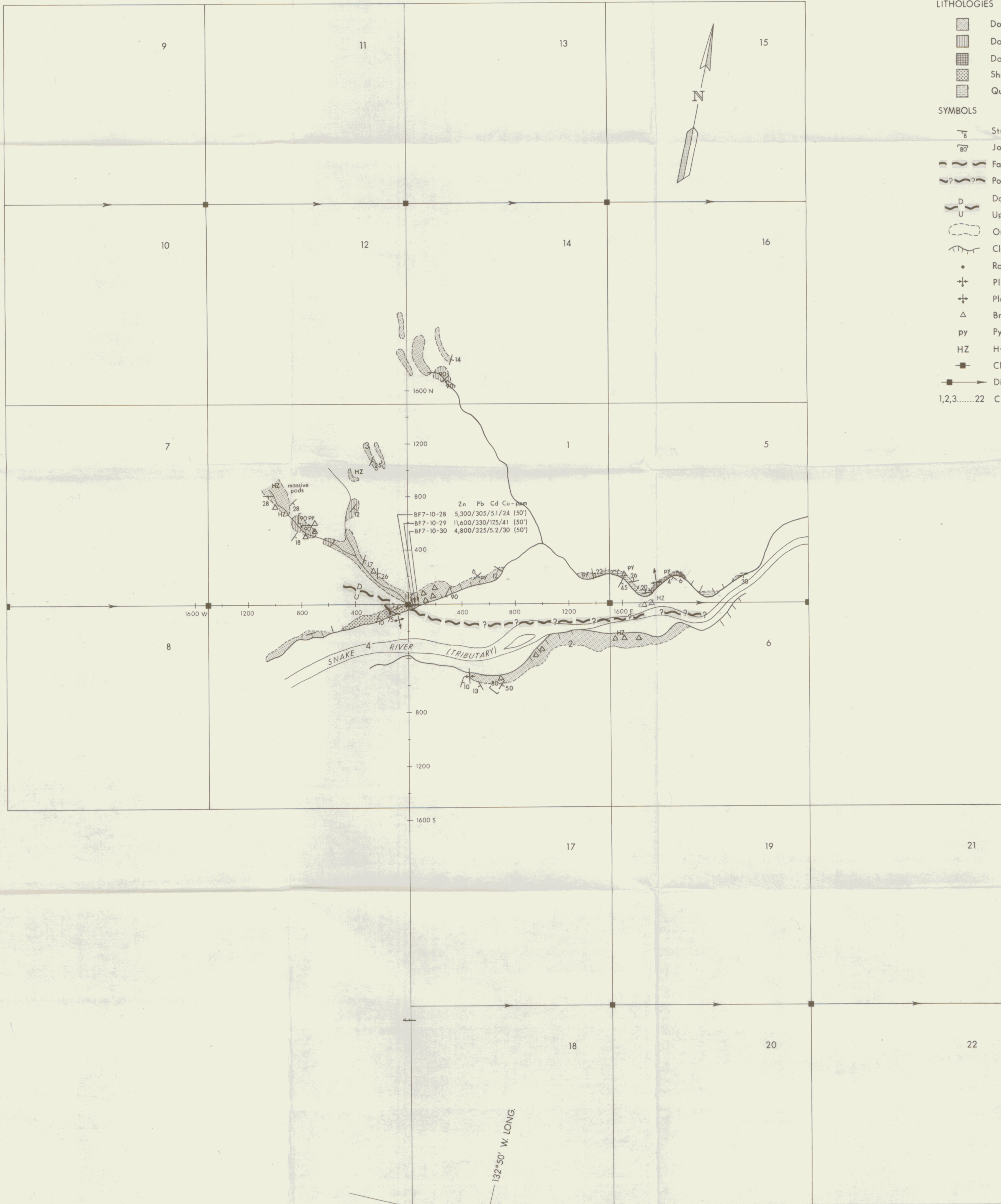
LEGEND

LITHOLOGIES

- Dolomite (Zebra texture & massive pods where labelled)
- Dolomite (Zebra texture & small wave-like folds)
- Dolomite (flaggy)
- Shale and fine grained dolomite interbeds
- Quartz pebble conglomerate

SYMBOLS

- Strike and dip
- Jointing
- Fault
- Possible fault
- Downthrow
- Uplthrow
- Outcrop pattern
- Cliff
- Rock assays with ppm Zn, Pb, Cd, & Cu
- Plunging syncline
- Plunging anticline
- Brecciated area
- Pyrite
- Hydrozincite
- Claim post
- Direction of claim lines
- 1,2,3.....22 Claim numbers



GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD. YUKON TERRITORY

MACKENZIE PROJECT

LAURA CLAIMS

GEOLOGY

400 200 0 400 800 FEET

MAYO M.D. BILL FARION BARRY EDMONSON JANET HELTON

FIGURE 16

JULY 18-24, 1975 NTS: 106 F-2

