

ARIES RESOURCES LTD.

GEOLOGICAL & GEOPHYSICAL  
REPORT

on the

THOR MINERAL CLAIMS

N.T.S. 106-E-1

$64^{\circ}03'$   $134^{\circ}30'W$

August, 1977

by

C. Harivel - Geologist

C. K. Ikona - P.Eng.

P. P. Nielsen - Geophysicst

APR 10 1978  
AWR

090304

This report was prepared by the  
Geological Engineering Division  
under contract to the State of Nevada  
and is representative work of the Division  
valued at \$10,000.00

*B. R. Baxter*  
Resident Geologist in  
Charge of the Division

Considered as permanent work under  
Section 53 (4) Nevada State Mining Act

*B. R. Baxter*  
B. R. BAXTER  
Supervising Mining Recorder  
Commissioner of Mines Territory

## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION .....	1
LIST OF CLAIMS .....	1
LOCATION AND ACCESS .....	1
TOPOGRAPHY AND VEGETATION .....	2
REGIONAL GEOLOGY .....	2
STRUCTURE .....	4
LOCAL GEOLOGY AND MINERALIZATION .....	5
ASSAY SAMPLES .....	8
GEOPHYSICS .....	8
Magnetics .....	9
Radiometrics .....	10
DISCUSSION OF RESULTS .....	10

### APPENDICES

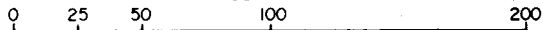
- ~~I. Engineer's Certificate~~
- II Letter Report, P.P. Nielsen, Geophysicist
- III Assay Certificate

### LIST OF FIGURES

- 1. Yukon Location Map ..... front
- 2. Claims Map ..... after page 1
- 3. Property Geology..... rear pocket
- 4. Magnetometer & Scintillometer Map, rear pocket
- 5. Regional Geology Map.....rear pocket

# YUKON LOCATION MAP THOR CLAIMS

SCALE IN MILES



DRAWN

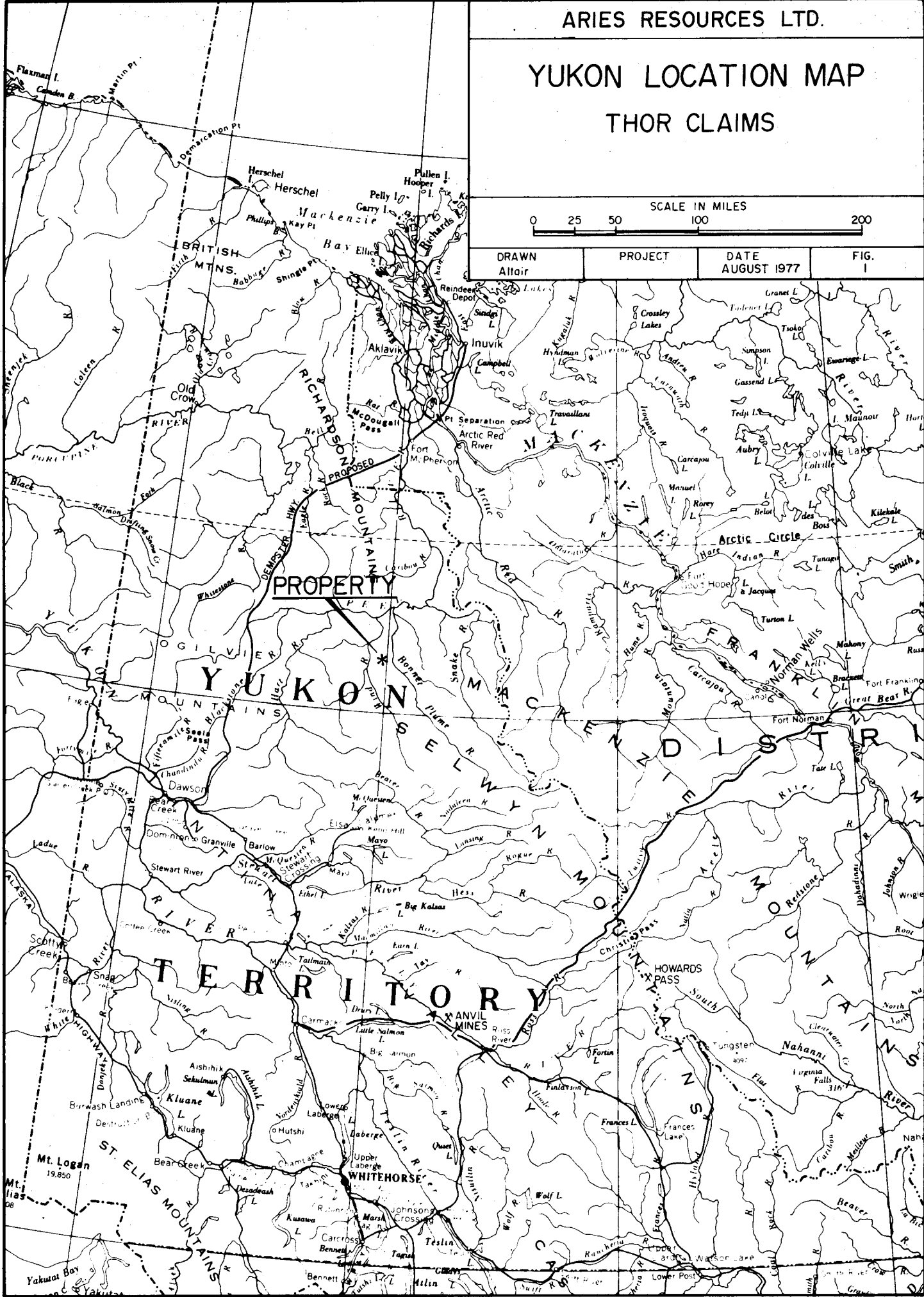
Altair

PROJECT

DATE  
AUGUST 1977

FIG.

1



## INTRODUCTION

The THOR mineral claims were staked in January, 1976 by Andrew Harman to cover geological units similar to those in which uranium had been discovered during the 1976 field season. The claim group was subsequently acquired by Aries Resources.

Preliminary exploration during 1976 demonstrated the presence of uranium in float and outcrop on the property. This work is described in a report dated December, 1976 by D. Yeager, geologist and C.K. Ikona.

The results of the 1976 program were felt to be of sufficient interest to warrant a more detailed program of geological mapping, prospecting, and geophysical surveys.

This report presents the results of this program which was carried out during June and July of 1977.

## LIST OF CLAIMS

<u>CLAIM NAMES</u>	<u>TAG NUMBERS</u>	<u>RECORDING DATE</u>
THOR 1-32 incl.	YA1755 - YA1786 Incl.	February 3, 1976

## LOCATION AND ACCESS

The THOR claims are located in the Mayo Mining District at 65°03' N. latitude and 134°30' W. longitude on N.T.S. 106-E-1.

Access to the property is by float equipped aircraft from the town of Mayo, Y.T. to Quartet Lakes, a distance of 115 miles. Both helicopter and fixed wing aircraft as well as

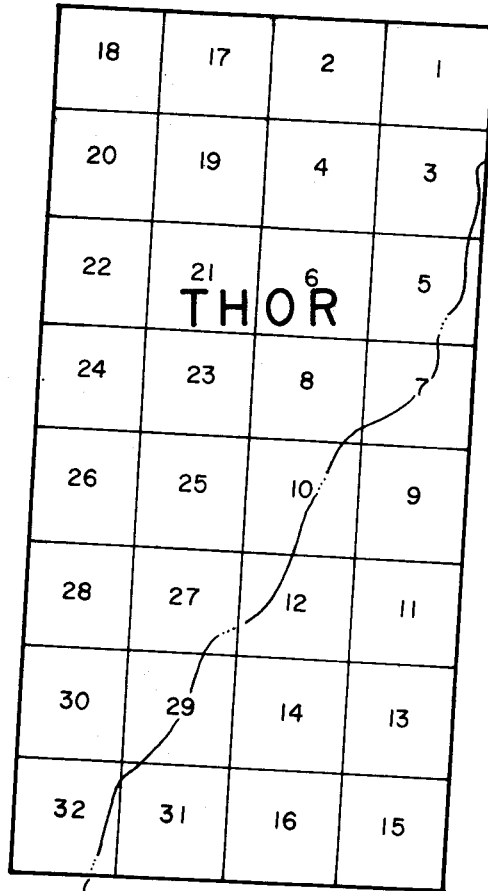
TET

GSTD



CREEK

SOL



OTIS

65° 03' N

SLATS

ARIES RESOURCES LTD.

THOR CLAIMS  
CLAIM MAP



DRAWN  
Altair

PROJECT

DATE  
AUGUST - 1977

FIG.  
2

134° 27'

full expediting services are available in Mayo.

From Quartet Lakes it is approximately 4 miles south to the property. This distance can easily be covered on foot in three hours, however, helicopter support from Quartet Lakes is necessary to establish a camp within the claims area.

#### TOPOGRAPHY AND VEGETATION

Elevations on the property vary from 2,000 to 4,500' above sea level. The group is split by the northwesterly trending valley of Slats Creek with steep talus slopes and bluffs on both slopes of the valley.

Vegetation is confined to the valley bottom and consists of minor scrub coniferous trees, willows and buckbrush.

#### REGIONAL GEOLOGY

The Quartet Lakes region lies in the Wernecke Mountains of the north eastern Yukon Territory. In the general area, the Werneckes consist of local ranges which include the Rackla Range, Bonnet Plume Range and Knorr Range. Topography is normally moderate to rugged with elevations ranging from 2,000 to 6,500 feet. The major river valleys are broad, timbered and extensively overburden covered, while most mountain slopes present greater than 60% outcrop above the 4,000 foot level.

The entire area has been mapped by the Geological Survey

of Canada and three separate publications are presented. The following memoir and open file reports give 1" = 4 miles geological coverage of the Nash Creek, Nadaleen River, Wind River and Snake River map areas.

- (1) Geology of Nash Creek, Larsen Creek and Dawson Map-Area, Yukon Territory by L.H. Green 1972 (Memoir 364).
- (2) Open File 205 (Geology of Nadaleen River and Bonnet Plume Lake Map sheets by S. Blusson) 1975.
- (3) Open File 279 (Geology of Snake River and Wind River sheets by D.K. Norris) 1975.

In the Quartet-Fairchild-Gillespie Lakes region Helikian rocks are exposed over an area of some 1,500 square miles in a roughly circular fashion centered near Longitude 134°00'W and Latitude 65°00'N.

These rocks, which represent early deposition in the northern portion of the Selwyn Basin or Richardson Trough, have been described as Units 1 & 2 by L. Green on the Nash Creek sheet.

Unit 1 is composed of a thick succession of moderately metamorphosed slates, argillites, phyllites and quartzites with interbedded dolomites. The lowest subdivision of Unit 1, whose base is not exposed, consists of chloritic-schists and calc-silicates all probably of volcanic origin.

Unit 2, which conformably overlies the uppermost slate-quartzite section of Unit 1, consists mainly of thickly

bedded orange weathering dolomites. The base of the Unit is marked by a series of transitional beds of alternating buff weathering dolomites and interbedded slates and quartzites.

Erratically distributed throughout the Proterozoic metasediments are irregularly shaped breccia bodies. The breccia zones vary from tens of feet to several thousand feet in size and appear as cross cutting pipe-like features at all levels in the stratigraphic column. Several varieties exist, but all exhibit an assortment of angular clasts derived from rock types common to the area. Hornfels margins observed at several localities indicate an intrusive origin.

In common association with many of the breccia bodies are zones of veining or locally pervasive feldspar alteration seen as internal features within the breccias or in host rocks adjacent to them.

The alteration zones are pink in colour due to either K-spar or strong hematization and in some instances contain varying amounts of specularite, chalcopyrite and minor uranium mineralization.

## STRUCTURE

Two major periods of deformation have taken place within the Wernecke Mountain region. During the first period or Racklan Orogeny, the Proterozoic rocks of Units 1 and 2 underwent intense folding and faulting. Folds are tight to

isoclinal with the development of strong axial plane cleavage and commonly an almost vertical foliation.

A major unconformity of Lower Hadrynian age forms the upper contact of Unit 2. In many localities, erosion beneath this unconformity has resulted in the complete removal of Unit 2 and the strong angular relationship between the relatively flat lying Cambrian and younger rocks directly overlying Unit 1 is apparent.

Further unconformities near the Upper Hadrynian, Lower Cambrian and Upper Cambrian margins leave Devonian carbonates directly over the Helikian section.

The second period of deformation, which involves both Paleozoic and Proterozoic strata, is weak compared to the first. This is particularly evident in the younger Carbonate sections to the west and southwest where deformation consists mainly of broad open folding and minor overthrusting.

#### LOCAL GEOLOGY AND MINERALIZATION

The THOR claims are underlain by rock types assigned to Lower Proterozoic unit Ho as described in G.S.C. Open File 279 which covers the geology of the Wind River and Snake River map sheets. Lithologies in this unit are described as mainly dark grey, grey-green and black, thin-bedded argillite, slate and phyllite; minor grey quartzite, orange weathering dolomite and conglomerate.

A geology map, at 1:10,000 scale, which covers the THOR claims, forms part of this report (Fig.3 ). In summary, the map shows a sequence of folded rocks which exhibit thin compositional bands and which for the greater part of the map area trend NE-SW and dip to the north. No bedding tops were determined. These rocks are separated from a sub unit of altered mudstone by a zone of brecciation, quartz-carbonate infusion, silicification, and hematitic alteration. The breccia zone is up to 30 metres wide, measured in a drainage exposure of almost continuous outcrop. Outcrop trends of the breccia zone, as mapped, suggest a trend comparable to the rocks mentioned above. In outcrop however, steeply dipping, east-west trending quartz-carbonate streaming is evident. To the east are steeply dipping, commonly silicified equivalents of rocks exposed west of the breccia zone. These rocks trend NNW-SSE. They are characterized by a pinkish cast and more blocky fracturing. All the laminated rocks exhibit fracture cleavage, the common trend of which is NE-SW dipping moderately north.

Copper is ubiquitous over the property. Chalcopyrite was almost invariably directly associated with quartz veins, stringers and pods. Many of these quartz bodies were aligned within the plane of compositional banding or fracture cleavage. Transverse veins and fractures which contain copper minerals were also observed. Copper minerals were not discovered in

sufficient quantity at any locality to warrant further interest. Pyrite, hematite and magnetite are all, separately and together, found in association with quartz and in some places with chalcopyrite.

Radioactivity was measured in float and outcrop over the property using a Scintrex Scintillometer model BSL-1. Background counts range from 110 to 220 cps (total count, no time integration) and rocks giving counts per second greater than 2X background were treated as anomalous. An area east of the main drainage within the breccia zone has boulders of high radioactivity, the highest of which was about 8,000 cps. These boulders were sampled 64676, 64604 and the results are respectively 0.049%  $U_3O_8$  and 0.001%  $U_3O_8$ . The boulders were local and were traced to a source a few metres up slope. The source area was chip sampled and the resulting assay is sample 64677 at 0.006%  $U_3O_8$ .

Other samples were collected from outcrop and float. These are located on Fig. 3 and described in the following section under Assay Sample.  $U_3O_8$  was present in these samples but in no case was of economic significance.

Uranium mineralization, as brannerite, is believed to be responsible for the anomalous radioactivity and is presumed admixed with masses and disseminations of specular and earthy hematite scattered erratically throughout the breccia zone and along the margins within country rock. High

radioactivity was always associated with pervasive, salmon-coloured alteration and commonly with quartz stringers.

### ASSAY SAMPLES

<u>Number</u>	<u>Cu (%)</u>	<u>U<sub>3</sub>O<sub>8</sub> (%)</u>	<u>Description</u>
64601	0.04	0.002	10' regular interval chip across mineralized breccia.
64602	0.01	0.002	10' regular interval chip - weakly mineralized breccia.
64603	0.01	0.002	5' regular interval chip weakly mineralized breccia.
64604	0.01	0.001	Grab of float weakly mineralized breccia.
64605	0.01	0.032	Grab float - breccia.
64676	0.01	0.049	Grab float - well mineralized breccia.
64677	0.01	0.006	5' chip - in situ source of boulders sampled in 64676 & 64604.

### GEOPHYSICS

A combined magnetometer and scintillometer survey was carried out over the breccia unit demonstrating the presence of U<sub>3</sub>O<sub>8</sub> in the south-eastern portion of the group. The area of the survey is indicated on Fig. 3 and Fig. 4 showing the results of the survey.

The baseline of the survey grid was orientated to parallel the projected surface trace of the breccia unit with crosslines at 200' intervals. Readings were taken at 50' spacing on both the base and cross lines.

Approximately 11,000 feet of survey was completed.

Instruments employed were a MF-1 magnetometer and a Scintrex GAM-1 scintillometer.

Results of this survey were interpreted by P.P. Nielsen, geophysicist (Appendix II) and are presented in Fig. 4 of this report. His interpretation is as follows:

A. Magnetics - The relatively high magnetic readings in the southwest quadrant of the map area (hachured area above +1200 gammas) is thought to represent a shale unit containing variable amounts of magnetite.

The low flat responses encountered to the south-east of the baseline represent a different level of metamorphism or another rock-type.

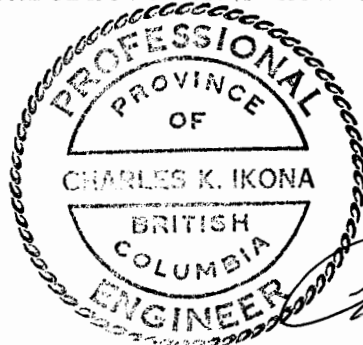
A marked change in the magnetic pattern is observed north-east of Line 10S. Two narrow, near vertical, dike-like bodies are interpreted near the baseline between Line ) and Line 6S. According to your briefing, this area is called the Wernecke Breccia Zone and thought to favour Uranium deposition. It is not clear from the magnetics if the southwest extention of this zone would be along the magnetic gradient (ie. 600 to 1000 gammas) or whether this zone trends off the survey grid to the southeast. The magnetic countours suggest that a strike-slip fault exists along Line 8S with a lateral movement of 400 feet. A possible

alternative is that an embayment or fold in the rocks takes place along and immediately to the northeast of Line 8S.

B. Radiometrics - Total count values above 165 c/s were plotted on the magnetic contour map and appear to occur erratically over the map below the 1400 gamma level although they are more densely located between Line 0 and Line 6S. There is no apparent correlation between the higher radiometric values and the tabular magnetic bodies mentioned above.

#### DISCUSSION OF RESULTS

Copper and to a lesser extent uranium are widely scattered within the THOR claims group. In no location, however does the mineralization appear to be of economic significance. The best mineralization located to date is contained within a unit of Wernecke Mountain breccia in the south-east portion of the group. Within this area individual samples of material grading in the 1 lb.  $U_3O_8$  per ton range can be obtained. This material however appears to be associated with some minor cross cutting structures and as such is erratically distributed in the area. This conclusion is also demonstrated by the scintillometer survey which demonstrates some non correlatable highs.



Yours sincerely,  
Charles K. Ikona, P.Eng.  
C. Harivel, Geologist.

August, 1977

Aug. 24, 1977.

Pamicon Development Ltd.  
6th Floor, 850 W. Hastings Street.  
Vancouver, B.C., V6A 1R6

Atten; Mr. C. Ikona

Re. Geophysical Interpretation  
Thor & Tet Claims,  
Slats Creek Area, Y.T.

Dear Chuck;

I have just completed plotting, contouring and interpreting the magnetometer and scintillometer survey data you delivered to me about two weeks ago. My comments are as follows;

1. TET Claims - Thor Explorations Ltd.

- A. Magnetics- Background is +200 gammas (relative vert. field) with some influence from topography suspected. A dipolar anomaly is centered at grid co-ordinates B.L. 0+00 with a vertical field relief of 38,000 gammas.

The cause of this feature (see enclosed profile AA') is interpreted as a dike-like body 500 feet long and 60 feet thick dipping about 45 degrees into the hill (ie. westerly). A considerable magnetic susceptibility is represented by this anomaly and is likely due to in excess of 3% magnetite by volume. Although outcrop containing magnetite and hematite is reported to have been observed just to the east of this feature a depth to top of 44 feet is interpreted from the profile.

- B. Radiometrics- Threshold appears to be around 120 c/s total count but rocks to the north of Line 8N exhibit higher values (ie. 160-200 c/s) suggesting a different or higher background rock-type. No distinct local pattern is evident although, generally, higher radioactive values correlate with lower magnetic readings.

CONCLUSIONS AND RECOMMENDATIONS - The property as covered by the present survey does not appear to offer much potential from a Uranium standpoint but the Magnetic anomaly described above should be further investigated as a possible copper- magnetite target.

2. THOR Claims - Aries Resources Ltd.

- A. Magnetics- The relatively high magnetic readings in the southwest quadrant of the map area (hachured area above +1200 gammas) is thought to represent a shale unit containing variable amounts of magnetite.

The low flat responses encountered to the south-east of the base-line represent a different level of metamorphism or another rock-type.

A marked change in the magnetic pattern is observed north-east of Line 10S. Two narrow, near vertical, dike-like bodies are interp-

reted near the baseline between Line 0 and Line 6S. According to your briefing, this area is called the Wernecke Breccia Zone and thought to favour Uranium deposition. It is not clear from the magnetics if the southwest extension of this zone would be along the magnetic gradient (ie. 600 to 1000 gammas) or whether this zone trends off the survey grid to the southeast. The magnetic contours suggest that a strike-slip fault exists along Line 8S with a lateral movement of 400 feet. A possible alternative is that an embayment or fold in the rocks takes place along and immediately to the northeast of Line 8S.

- B. Radiometrics- Total count values above 165 c/s were plotted on the magnetic contour map and appear to occur erratically over the map below the 1400 gamma level although they are more densely located between Line 0 and Line 6S. There is no apparent correlation between the higher radiometric values and the tabular magnetic bodies mentioned above.

CONCLUSIONS AND RECOMMENDATIONS- On the basis of the above, no further work is warranted on this property in the immediate grid area.

Please find enclosed the field notes, preliminary contour maps and profile, and, of course our invoices .

Thank-you, Charles for considering us for this work and I look forward to seeing you soon, perhaps in connection with that proposed investigation east of Ross River, Y.T.

Best regards,

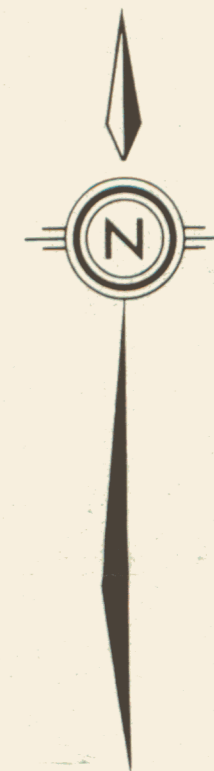


P.P. Nielsen, B.Sc.,  
Geophysicist.











Encls.

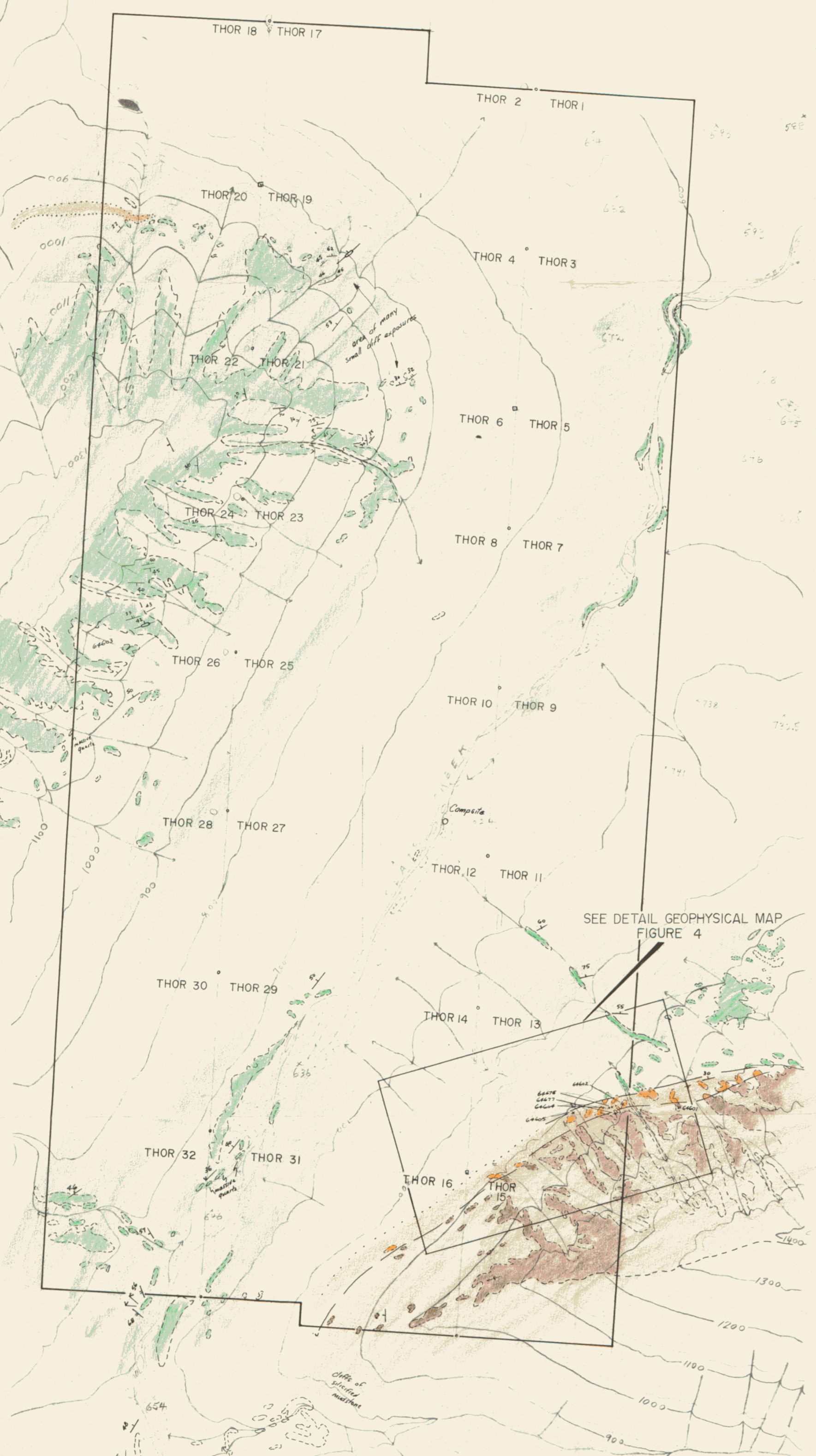
Contour maps (2)  
Profile (1)  
Field notes  
Invoices #164 & #165





LEGEND

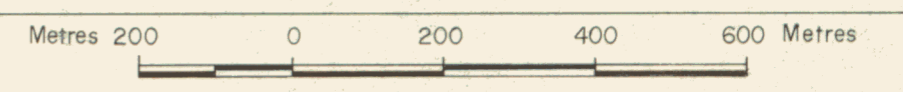
-  ZONE OF WERNECKE BRECCIA
-  THIN-BEDDED GREEN, GREY-GREEN ARGILLITE & SLATE  
1a PINK, SILICIFIED EQUIVALENT OF 1 ABOVE.
-  QUARTZ VEIN
-  LIMIT OF OUTCROP
-  GEOLOGIC CONTACT INFERRED
-  ATTITUDE OF VEIN
-  ATTITUDE OF COMPOSITIONAL BANDING
-  ATTITUDE OF SLATY CLEAVAGE
-  LOCATION OF CLAIM POST KNOWN, UNCERTAIN
-  ASSAY SAMPLE NUMBER



ARIES RESOURCES LTD.

THOR CLAIMS  
GEOLOGY

N.T.S. 106 E.



SCALE: 1 : 10,000      DATE: August 1977

PAMICON DEVELOPMENTS LTD.      FIGURE No. 3

11 W 10 W 9 W 8 W 7 W 6 W 5 W 4 W 3 W 2 W 1 W 0 B/L 1 E 2 E 3 E 4 E 5 E 6 E



N.B. - CONTOUR INTERVAL LOGARITHMIC & IN GAMMAS

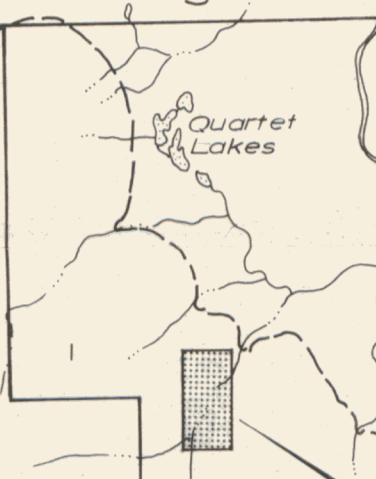
VALUES ARE RELATIVE  
ABSOLUTE VALUE OF VERTICAL  
FIELD UNKNOWN

○ RADIO-ACTIVE HIGHS (ie) ABOVE  
140 C/s TOTAL COUNT

ARIES RESOURCES LTD.	
THOR CLAIMS GROUND MAGNETOMETER SURVEY VALUES & CONTOUR MAP	
N.T.S. 1:1000	
SCALE 1" = 100 FEET	
SCALE 1" = 100 FEET	DATE: August 1977
PAMICON DEVELOPMENTS LTD.	FIGURE No. 4



AREA OF RECENT STAKING



THOR CLAIMS



**LEGEND**

- QUATERNARY**  
26 Unconsolidated glacial and alluvial deposits.
- CRETACEOUS & TERTIARY**  
20a Orange-to-brown-weathering diorite and gabbro; altered equivalents.
- DEVONIAN**  
10 Limestone, dark grey, brown and black, massive to thin-bedded, very fine grained, buff-grey-weathering.
- ORDOVICIAN & SILURIAN**  
8 Grey and buff-weathering dolomite and limestone, mostly medium to thick bedded; minor platy black argillaceous limestone and dolomite.
- PROTEROZOIC**  
2 Orange-weathering, platy, grey green dolomite, dark slate, minor phyllite and quartzite.
- PRECAMBRIAN**  
1 Mainly dark grey, grey green, and black, thin bedded argillite, slate, and phyllite; minor grey quartzite, orange-weathering dolomite and conglomerate.

**SYMBOLS**

- Geological boundary
- Bedding tops known (horizontal, inclined, vertical)
- Bedding tops unknown (dip known)
- Bedding-foliation; (horizontal, inclined, vertical) (dip, m-medium, s-slight)
- Fault (defined, approximate, assumed)
- Anticline (defined, approximate, arrow indicates plunge)
- Syncline (defined, approximate, arrow indicates plunge)

ARIES RESOURCES LTD.			
GEOLOGY - SECTION OF OGILVIE MTNS.			
OUTLINE OF PROTEROZOIC BASIN			
SCALE IN MILES			
DRAWN Altair	PROJECT	DATE AUGUST 1977	FIG. 5