COMPILATION REPORT
ON THE
FAIR MINERAL CLAIMS

N.T.S. 106C-13

MAYO MINING DISTRICT

64° 57' N 133° 45' W

YUKON TERRITORY

FOR

ENERGEX MINERALS LTD.

BY

CHARLES K. IKONA, P. ENG.

D. YEAGER, GEOLOGIST

MAY 1981

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

$ 3,000.00

Ruth Debicki A. Reg Geol.

Resident Geologist or
Resident Mining Engineer June 19/81

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

Commissioner of Yukon Territory

INDIAN and NORTHERN AFFAIRS

TRANSMITTAL FORM

M.R. File No. _____
S.M.R. File No. 1
Date Fwd. 11/6/81

FROM: Mining Recorder at ..... MAYO .....

TO: Supervising Mining Recorder at Whitehorse, Y.T.

Office of the Supervising Mining Recorder
JUN 18 1981
WHITEHORSE
Yukon Territory

FOR ACTION ARE:

☐ NEW APPL'N for PLACER LEASE to PROSPECT: Name:

☐ RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: Lease No. .....

☐ AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name: Lease No. .....

☐ ASSIGNMENT of PLACER LEASE No. .....
From: To:

☐ GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.
Owner:

☐ DIAMOND DRILL LOGS:
Claims: Claim sheet no:

☑ QUARTZ ASSESSMENT REPORT:
Claims: FAIR Claim sheet no. 106-C-13
Type of report: Submitted by: ENERGEX MINERALS LTD
Cls. work performed on: $ Req. for ren. application
FAIR 1-8; 13-34 3000 00

Signature

REPLY ACTION: Date Ret.

090830

Signature

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

PAGE

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

This report is based on a compilation of information on the FAIR mineral claims made available by ENERGEX MINERALS LTD. To aid in this compilation, a 1:10,000 scale orthophoto prepared by Northwest Survey Corporation was blown up to a scale of 1:5,000. Information derived from reports previously written about the property was then plotted on the blown up orthophoto. Interpretations of the data and recommendations for further work are presented in this report.

2.0 LIST OF CLAIMS

The Fair group consists of 32 contiguous mineral claims located under the Yukon Quartz Mining Act. Several posts examined by the author indicate that the staking was in accordance with the Act.

Claim Name	Recording Date	Grant Number
Fair 1- 8	May 23, 1978	YA30243-YA30250
Fair 10-11	May 30, 1974	Y88673-Y88674
Fair 13-34	May 23, 1978	YA30251-YA30272

3.0 LOCATION AND ACCESS

The Fair claims are located on N.T.S. Sheet 106C-13 on the south shore of Fairchild Lake in the northeastern Yukon Territory. Approximate co-ordinates of the claim group are 64° 57' N Latitude, 133° 45' W Longitude.

Access to the property is by fixed wing aircraft from the Town of Mayo to Fairchild Lake, a distance of approximately 120 miles. A crudely constructed tote road, approximately one-half mile in length, connects the Fairchild Lake campsite with the old drill sites and trenches. In addition, there is a winter cat road from Hansen Lakes near Elsa, Y.T. to the Bonnet Plume River area by way of Braine Pass and McCluskey Lake.

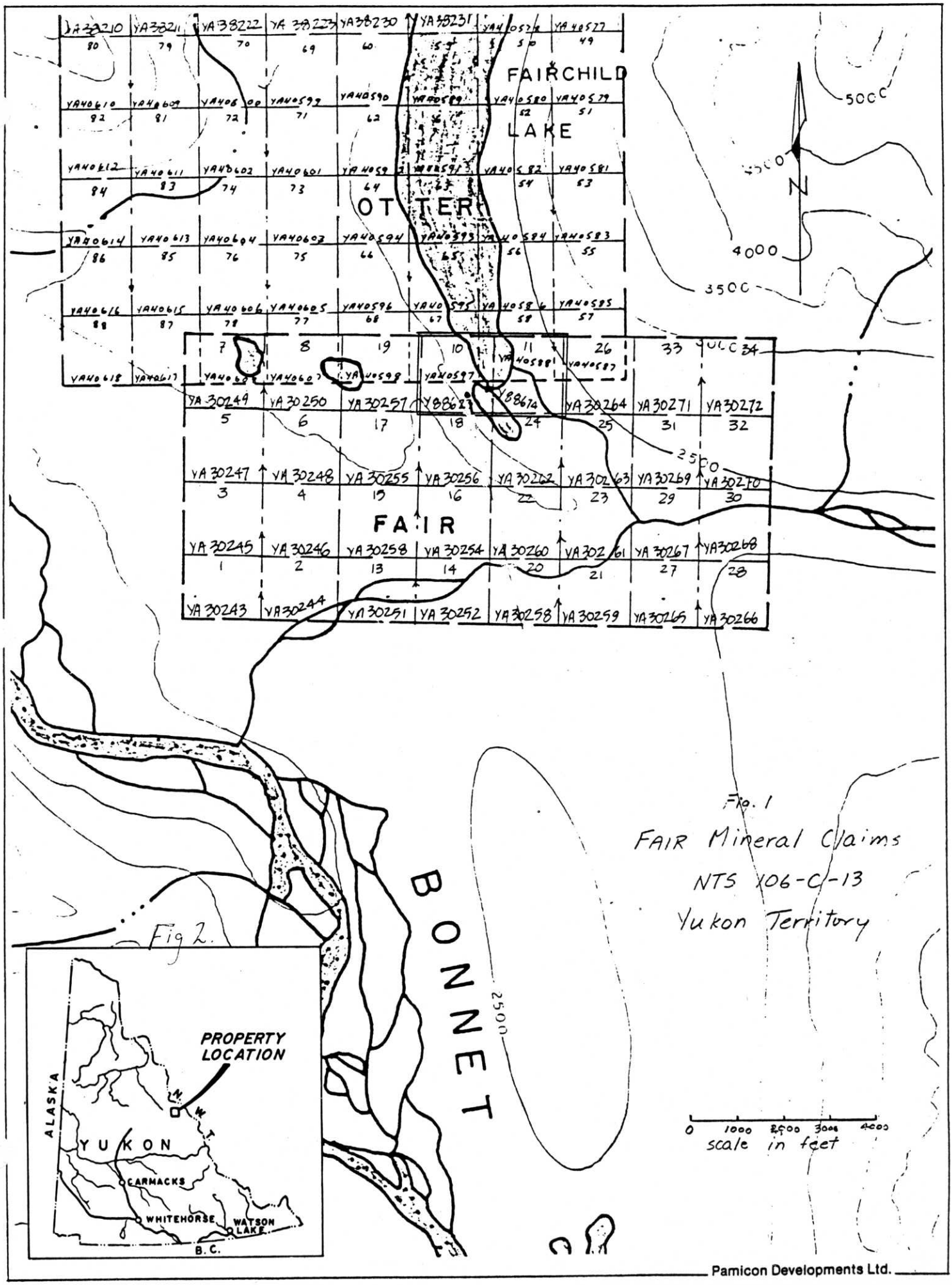


Fig. 1

FAIR Mineral Claims

NTS 106-C-13

Yukon Territory

Fig 2.

Pamicon Developments Ltd.

4.0 TOPOGRAPHY AND VEGETATION

Elevations on the claims range from 2,000 to 2,800 feet A.S.L. with moderate topography over most of the property. Exceptions to this are some areas where small fault controlled cliffs occur.

The entire property lies below timberline and is covered with moderate size black spruce.

5.0 HISTORY

5.1 Regional

Copper showings in the area were noted by trappers in the early 1900's. Since then the area has received sporadic mineral exploration activity. In 1971, the discovery of lead-zinc showings in the region brought attention to the area once again. It was during this wave of activity that the existence of uranium was recognized in the Proterozoic basin hosting the Fair claim group. Subsequent exploration work has discovered many uranium occurrences as well as a number of interesting cobalt prospects.

5.2 Property

The Fair group was originally acquired by Mr. C. Boitard for the copper showings which had been recognized for some time. In 1974, while under option to Meika Mining Ltd., an airborne magnetic and VLF-EM survey was carried out by Geotronics Surveys Ltd. Subsequent to this two diamond drill holes were located on EM anomalies located by the survey. These holes were non determinate and to the writers' knowledge were not logged at the time. The program then came to a halt and the property lay dormant until acquired by Energex in 1978. Reference is made to a Geological Report on the Fairchild Lake Property of Menika Mining Ltd. by L. Sookochoff dated February 19, 1975 and a Geophysical Report on an Airborne Magnetic and VLF -EM Survey by David G. Mark dated March 27, 1975.

6.0 REGIONAL GEOLOGY

6.1 Lithology

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

Geological Survey of Canada stratigraphic work by Bell and Delaney (1976) has designated these Helikian and older rocks as the Wernecke Supergroup subdivided into Fairchild, Quartet and Gillespie groups.

The Fairchild group, whose base is not exposed, is composed of a thick succession of moderately metamorphosed fine grained clastic sediments with interbedded carbonates. The overlying Quartet group consists of thinly interbedded slates and argillites with occasional quartzite beds.

The Gillespie group, which conformably overlies the uppermost slate/quartzite section of the Quartet group, 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.

A 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.

Lithology (continued)

The alteration zones are pink in color due to potassium feldspar and/or strong hematization and in some instances contain varying amounts of specularite, chalcopyrite and minor uranium mineralization.

6.2 Structure

Two major periods of deformation have taken place within the Wernecke Mountain region. During the first, or Racklan Orogeny, the Proterozoic rocks of the Wernecke Supergroup 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 the Gillespie group. In many localities, erosion beneath this unconformity has resulted in the complete removal of the Gillespie rocks and the strong angular relationship between the relatively flat lying Cambrian and younger rocks directly overlying the Fairchild and Quartet groups is apparent.

Other 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.

7.0 PROPERTY GEOLOGY

7.1 Introduction

Preliminary mapping of the Fair claims was completed by C.K. Ikona in 1978. The property is underlain by rock units assigned to the Fairchild group with the exception of the intrusive rock located to the east of Fairchild Creek. Copper mineralization appears related to the intrusive feature while uranium mineralization occurs along structural trends within argillaceous

Introduction (continued)

limestones of the Fairchild rocks.

7.2 Lithology

Most of the Fair claims are underlain by argillaceous limestone of the Fairchild group. This limestone occurs as light grey weathering, small bluff forming outcrops through the central part of the map area. Composition of this rock varies with respect to the content of argillaceous detrital material and by the degree of post depositional alteration. Fine grained, granular crystalline calcite varies from 70 to 90% with light green clusters of fine grained chlorite and cryptocrystalline argillaceous material forming the balance of the limestone's principal constituents. Hematite and/or magnetite are the principal accessory minerals.

Increased alteration usually leads to an increased chlorite content and to partial feldspathization/hematization of the limestone. This is particularly evident in areas of uranium mineralization where the rock becomes salmon colored. Within the limestone unit are minor interbeds of weakly calcareous, siliceous siltstones. These are medium grey in color with a brown weathering crust. Towards the southwestern edge of the property the limestone becomes banded, siltier and less massively bedded.

A thin bedded green-brown siltstone with shale partings containing minor pyrite and associated limonite is located in several areas on the property. Stratigraphic relationship of this unit with the limestone is obscure but both are probably of the same depositional sequence although some fault contacting is possible.

South and west of a major northwest trending fault is a medium to dark greenish grey, non-calcareous phyllite composed of very fine grained chlorite, sericite and other micaceous minerals. This unit is probably Fairchild group but substantially younger than the limestone. Its location, topographically lower than the limestone, indicates a substantial vertical movement of the fault contact.

Lithology (continued)

East of the creek draining the south end of Fairchild Lake is a small hornfels intrusive complex. The intrusive appears to be mainly of a porphyritic, mafic character possibly of gabbroic composition. It is generally of a dark grey color and contains feldspars, biotite, hornblende, magnetite and associated copper mineralization. Abundant veining with associated chalcopyrite and magnetite is apparent along with tectonic brecciation of local country rock. In this instance the matrix is principally quartz and chalcopyrite while the country rock has been altered to chlorite and magnetite.

7.3 Structure

The area of the Fair claims has been subject to extensive faulting. The most obvious of these are a set of at least two WNW trending faults sub-paralleling and probably related to the Bonnet Plume Fault to the south. The Bonnet Plume Fault is considered a splay from the Knorr Fault which is related to the development of the Richardson Anticlinorium.

Less obvious but still well developed is a set of NE trending faults. The degree of shattering and rehealing within the limestone unit indicates additional extensive local movements.

Attitudes within the property vary significantly as would be expected with the degree of movement although a general east west strike with moderate dip to the north is suspected for a general trend.

7.4 Mineralization

Radioactive mineralization has been found at nine locations on the Fair claims. In general this mineralization occurs in massively bedded argillaceous limestone exhibiting a high degree of feldspathization and hematization and is generally characterized by a salmon coloration of the unit. Controls for this alteration and mineralization are not understood to date, although some structural contribution is suspected. Nine assay samples ranged from .001% to .061% U_3O_8 (Ikona, 1978). The only

Mineralization (continued)

uranium mineral identified to date on the claim group is brannerite. Crystals of this mineral up to 1/4" across were located in float adjacent to the showing at the east corner of "A" grid, and smaller crystals were noted in the showings on the "B" grid.

Minor chalcopyrite was noted in a few scattered locations in the limestone unit. The main copper showings are assocated with the intrusive complex where chalcopyrite, bornite, malachite and azurite were observed. Chalcopyrite was noted as occurring in quartz rich veining, fracture filling and as disseminations in the intrusive.

8.0 GEOPHYSICS

8.1 Introduction

Two geophysical surveys have been done on the property. The first was a combined airborne magnetic and VLF-EM survey reported by Mark (1975); and the second, a ground spectrometer survey reported by Ikona (1978).

A Bell Jet-Ranger helicopter was used to fly the airborne survey. The survey was carried out by following pre-established lines on a blown-up photograph of the area. Lines were 550 to 600 feet apart and flown in a northeast-southwest direction. The terrain clearance was kept at approximately 400 feet. Tie points were made over prominent topographic features, numbered, recorded and plotted on the maps.

The magnetic readings were taken with the magnetometer set on a 1.7 second recycling period which, considering the helicopter speed, corresponds to readings taken at intervals of about 150 feet.

The VLF-EM equipment provided for a continuous plotting of the dip angle and of the field strength.

Results of these surveys are presented in Figures 3 and 4 of this report.

Introduction (continued)

The ground survey was carried out because the more interesting uranium showings on the Fair group appeared to indicate a possible relationship to the major NWN trending fault cutting through the small lake to the south of Fairchild Lake. Accordingly two grids on a 40 meter x 40 meter spacing were laid out to cover the more promising of the showings and the fault in the area of the showings. The locations of these grids are shown on Figure 10 as 'A' grid and 'B' grid. These grids were used for geochemical sampling and a spectrometer survey.

The spectrometer survey used an Exploration Discriminating Spectrometer (Model D.I.S.A. 300). Counts for a 60 second interval were recorded for total count, potassium count, thorium count and uranium count. The manufacturer's formula for the instrument was used to reduce this field data to parts per million thorium, parts per million uranium, and uranium-thorium ratios. Results of these surveys are presented in Figures 5 and 6 of this report.

TABLE 8.1.1

COMPARISON OF ANOMALY NUMBERS

Figure 3		Figure 10
Anomaly 1, 1', 1"	=	Anomaly A1, A1', A1"
Anomaly 2	=	Anomaly A2
Anomaly 3	=	Anomaly A3
Anomaly 4	=	Anomaly A4
Anomaly 5	=	Anomaly A5
Anomaly 6	=	Anomaly A6
Anomaly 7	=	Anomaly A7

Figure 4		Figure 10
Anomaly A	=	Anomaly B1
Anomaly B	=	Anomaly B2
Anomaly C	=	Anomaly B3
Anomaly D	=	Anomaly B4
Anomaly E	=	Anomaly B5
Anomaly F	=	Anomaly B6
Anomaly G	=	Anomaly B7

8.2 Airborne Survey Results (after Mark, 1975)

1. The prominent airborne magnetic high labelled 1 (A1, A1', A1" Figure 10) very likely reflects a calc-silicate nornfel since this rock-type was found to occur on one limb of the anomaly and since this is the only magnetic rock-type known in the area. The anomaly parallels the lake and creek which were likely formed by a fault zone and, therefore, the formation of the hornfels are likely related to a fault system.

2. The remaining magnetic anomalies could either be caused by hornfels or perhaps a subsurface terrain variation in a magnetic rock-type. For example, the first drill hole ended in greenstone which indicates that volcanics underlie the sediments.

3. The two most prominent EM anomalies, labelled A and B (B1 and B2 Figure 10) are likely caused by graphite and perhaps also chalcopyrite since both were encountered in the drill holes on Anomaly A (B1 Figure 10).

4. The remaining EM anomalies could well be caused by graphite or chalcopyrite, but since their magnitude is quite a bit less than that of A or B, other causes must be considered such as faults, shears, clay sediments, or underground water courses.

8.3 Ground Survey Results (after Ikona, 1978)

"A" Grid (Figure 5)

1. It can be noted that a major anomalous zone in U/Th ratios extends in a northeasterly direction across the grid, open at both ends.

2. As was mentioned in Section 8.1, the 'A' grid was located with the expectation that the NW trending fault may be a controlling factor for the uranium mineralization which had been previously located. However, the U/Th ratio spectrometer anomaly trends

"A" Grid (continued)

at a NE angle and appears to be coincident with one of several secondary lineaments which are identifiable on air photos of the property.

3. It is felt that the U/Th anomalies are real anomalies rather than spurious anomalies resulting from abnormally low thorium values.

"B" Grid (Figure 6)

The results are not as empirically high as the 'A' grid results. However, as on 'A' grid, a definite and previously unexpected anomaly trending N35°E is apparent.

9.0 GEOCHEMISTRY (after Ikona, 1978)

Soil samples were taken at grid stations on "A" and "B" grid in 1978 (Ikona). The samples were run for uranium and the results are presented in Figures 7 and 8.

"A" Grid

Geochemical results indicate a small anomaly in the northwest corner of the grid along with a possible NE trend although correlation with spectrometer data is poor. It is felt that the swampy conditions prevalent over most of the grid are contributing to the poor geochemical definitions.

"B" Grid

Geochemical results are generally low throughout the grid area with little or no interpretation possible other than some minor anomalous values in the area of the main showing.

10.0 PREVIOUS DIAMOND DRILLING (after Ikona 1978)

Two diamond drill holes were drilled for copper on the Fair group in 1974. These drill holes were located on electromagnetic anomalies located by an airborne survey.

FAIR B. Grid

U/T ratios

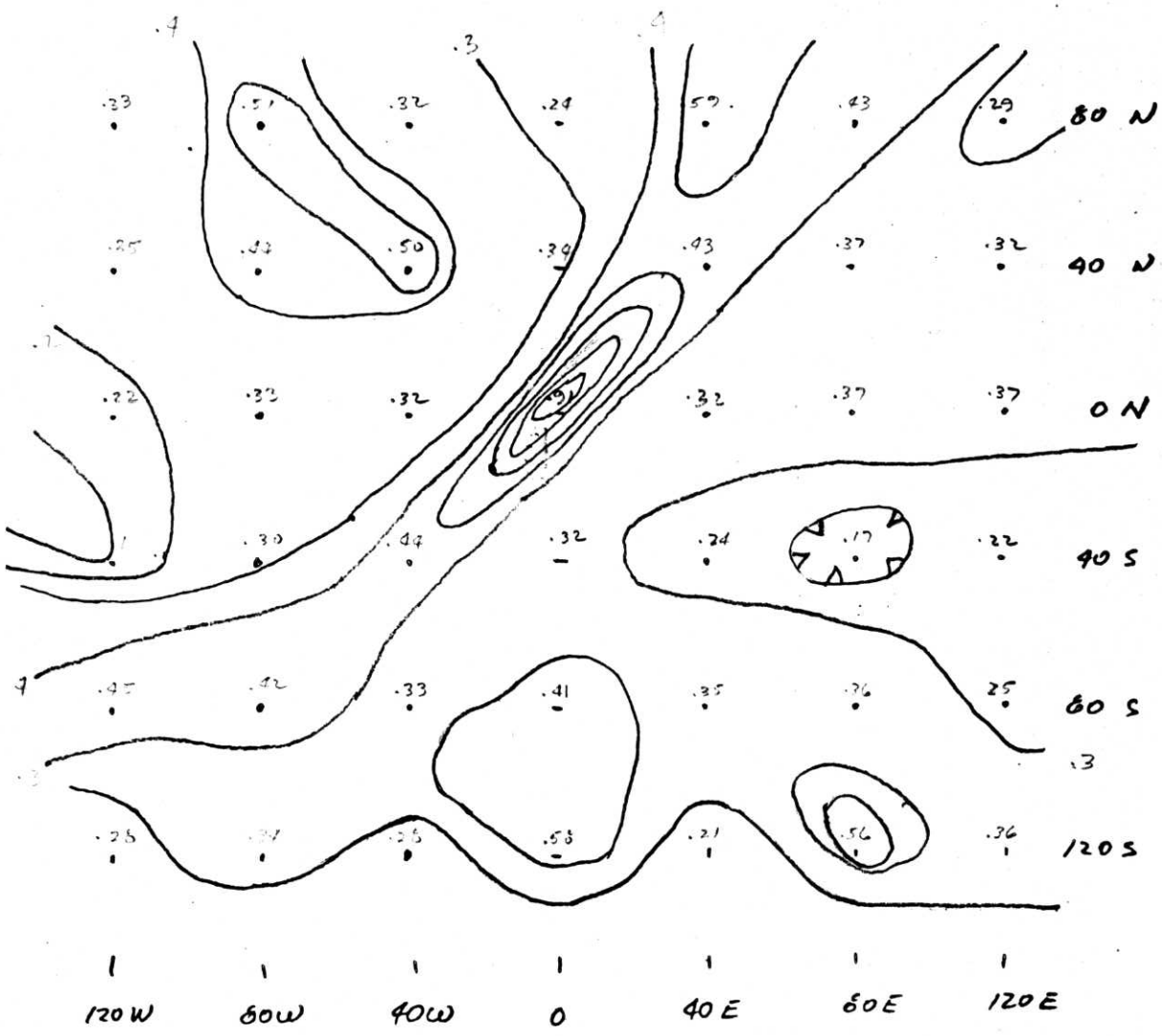


Fig. 6
U/Th ratios "B" grid
scale- 1: 2000
May, 1981
- after Ikona et al (1978)
field sketches

Figure 7 May 1981

ENERGEX MINERALS LTD.

FAIR CLAIM GROUP
'A' GRID
GEOCHEMICAL SURVEY
P.P.M. URANIUM

PAMICON DEVELOPMENTS LTD.

SCALE 1:2000
m. 20 0 20 40 70 100 m.

DRAWN	PROJECT	DATE	FIG.
Altair		NOV. 1978	10

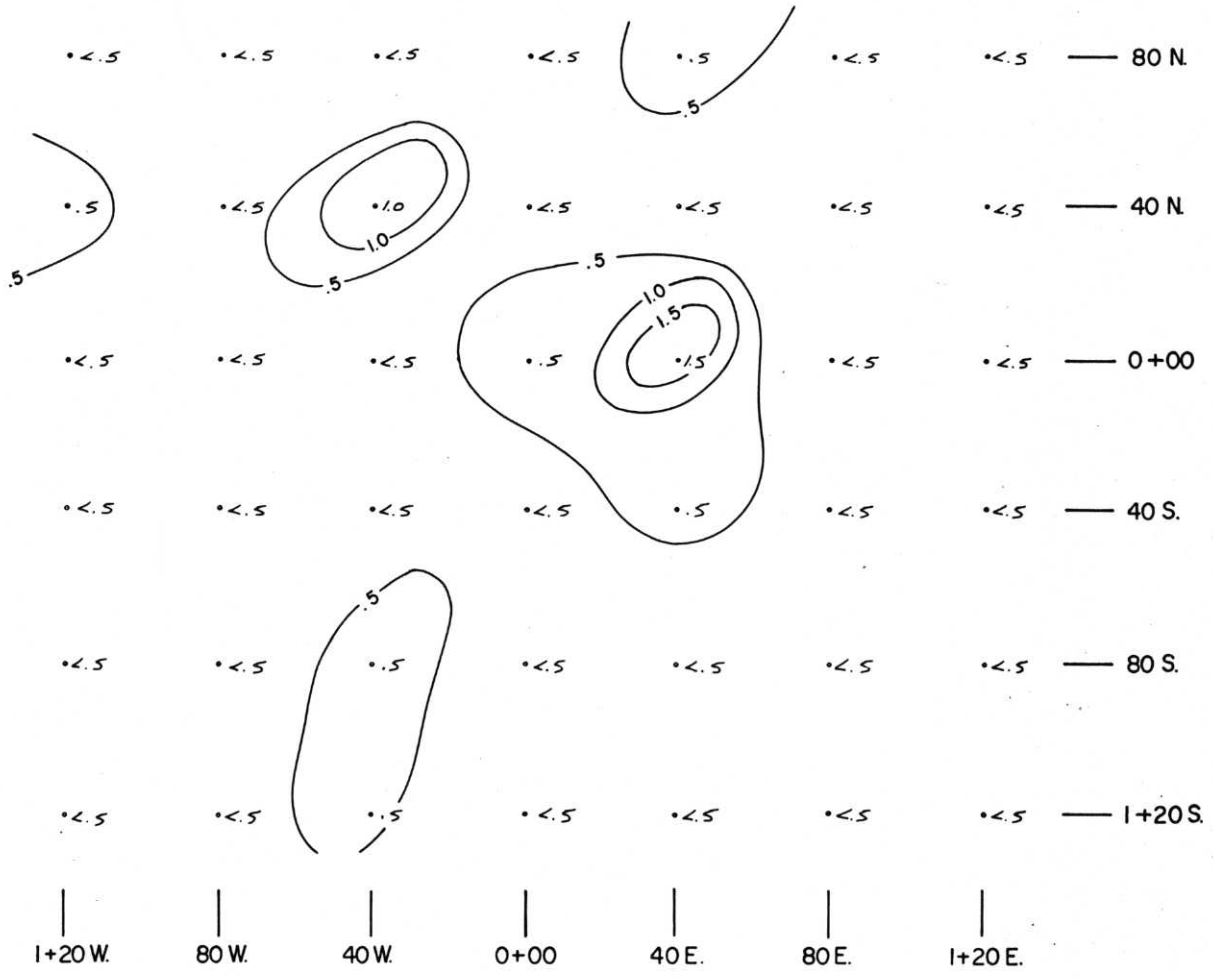


Figure 8 May, 1981

ENERGEX MINERALS LTD.

FAIR CLAIM GROUP
'B' GRID
GEOCHEMICAL SURVEY
P.P.M. URANIUM

PAMICON DEVELOPMENTS LTD.

SCALE 1:2000
m. 20 0 20 40 70 100 m.

DRAWN	PROJECT	DATE	FIG.
Altair		NOV. 1978	11

PREVIOUS DIAMOND DRILLING (after Ikona 1978) [continued]

Results of these holes were not encouraging and it is doubtful that they were even logged at the time. The core was left on site in open boxes until 1977 when it was removed by the Department of Indian and Northern Affairs and stored in the H.S. Bostock core library in Whitehorse. This core is felt to be incomplete through poor recovery in the hole and/or subsequent loss prior to being received by the library.

Briefly, D.D.H. No. 1 commenced in the argillaceous limestone passed into an intrusive breccia at 70 feet and a silicified siltstone between 88 and 150 feet; and then back into intrusive breccia to the end of the hole at 239 feet. D.D.H. No. 2 intersected intrusive breccia below 43 feet of overburden, passing into a silicified siltstone breccia at 55 feet to the end of the hole at 113 feet. Fracturing, chlorite, graphite and kaolinization were prevalent in the units. The intrusive breccia and silicified siltstone were not noted in surface mapping.

D.D.H. No. 1 encountered three zones of radioactive material. At 141 feet a feldspathized siltstone with fine grained brannerite was encountered. The intersection thickness could not be determined due to extremely poor core recovery. At 205 feet and 209 feet, specks of radioactive hematization were noted.

The relationship between this drill hole and the spectrometer anomaly will require more detailed surface work.

11.0 DISCUSSION AND CONCLUSIONS

11.1 Structures

The FAIR claims are host to a large number of copper and uranium occurrences and are situated in a highly faulted, fractured, and sheared structural zone.

Structures (continued)

a) The structures with the strongest topographic and air photo linear expression trend NW-SE and can be traced continuously on air photos for 4 to 5 kilometres in length.

b) A secondary set of faults and linears trend NE-SW. Although these are in places as deeply incised topographically as the NW set, they do not appear to be as long.

c) A third set exhibit a NW-SE trend similar to the primary set but intersect the primary set at a more northerly angle.

11.2 Geophysics

A number of geophysical anomalies have been indicated by the various surveys done to date. These can be separated into groups based on their strength and size characteristics.

The VLF-EM anomalies are of two types:

a) Anomalies B1 and B2 exhibit peak field strengths of 19% and 23% and peak dip angles of 9° to 14°. These anomalies are somewhat larger in area than the rest. Anomaly B1 was shown in the drilling to be caused by large graphite seams. Presumably Anomaly B2 has a similar cause.

b) Anomalies B3 to B7 are smaller in area; have field strengths ranging from 3% to 10%; and dip angles from 2° to 5°. These secondary anomalies are more likely to reflect sulphide conductors than the much stronger B1 and B2 anomalies.

The magnetic anomalies are of three basic types:

a) Anomaly A1-A1'-A1" has a peak value of 10,090 gammas and features very steep gradients on either side of the elongate high.

b) Anomalies A2 to A7 have peak values ranging from 9,250 gammas to 9,360 gammas and have gentler gradients overall.

Geophysics (continued)

c) Two magnetic "low" areas with values below 8,600 gammas occur on either side of Anomaly A1-A1'.

The uranium:thorium ratio spectrometer anomalies all exhibit a NE-SW linear trend parallel to the secondary NE-SW fault set. Anomaly C3 on "B" grid has somewhat lower values than Anomalies C1 and C2 on "A" grid.

11.3 Copper Mineralization

The copper showings found to date on the property are associated with the mafic hornfels body on the east side of the creek draining Fairchild Lake. This hornfels appears to contain a number of magnetic minerals and is accordingly very well outlined by the magnetic Anomaly A1-A1'-A1". The anomaly extends into overburden covered areas and is open to both the northwest and the east. If copper mineralization is associated with the entire body, then there is considerable potential for tonnage in this area. The EM survey generally does not appear to have indicated this copper area with the single exception of Anomaly B6.. As Anomaly B6 is one of the secondary EM conductors (presumably not due to graphite), this could well indicate a zone of interest. There are two other areas exhibiting combined secondary VLF-EM and magnetic high anomalies: Area A4-A5-B3 and Area A3-B4. Although the magnetic anomalies are not of the mafic hornfels type, these areas require further investigation.

11.4 Uranium Mineralization

The uranium showings discovered so far on the claims definitely show an association with mapped faults and air photo linears. This is quite noticeable on the orthophoto compilation (Figure 10). Further confirmation was received in Drill Hole 1 which, by coincidence, was spotted adjacent to the NE-SW fault cutting across "A" grid and intersected radioactive zones at three places. This was in an area of no surface showings.

Uranium Mineralization (continued)

The spectrometer survey indicated a NE-SW trend of uranium:thorium ratio values. From this information alone it is not possible to state that these secondary structures will be "host" structure for economic uranium mineralization. However, knowledge of the relationship certainly sheds some light on the distribution of uranium on the property and will prove to be an invaluable exploration tool.

Some definite uranium in soil anomalies was detected. It is not clear at this point what relationship these anomalies have to uranium in bedrock; that is, whether or not they are transported anomalies due to movement of ground water, surface water, or soil.
Certainly the soil anomalies on "B" grid reflect actual outcrop showings. If the soil anomalies on "A" grid also reflect bedrock sources, then there are potential targets in the overburden covered D1 and D2 areas.

11.5 Cobalt Mineralization

Although no cobalt mineralization has been found on the FAIR claims to date, the Fairchild Lake area is host to a number of cobalt occurrences being investigated by Pan Ocean Oil Ltd. The possibility of cobalt deposits on the FAIR claims should be investigated.

11.6 Models of Mineral Deposition

Several models of metal deposition are possible given the geology mapped to date:

a) Hydrothermal sulphide and uranium vein systems associated with fracture and shear zones.

b) Massive sulphides to disseminated sulphides with lesser uranium in skarn type environments where the argillaceous limestones and/or limey sediments are in contact with intrusive breccia bodies and/or the mafic hornfels.

Models of Mineral Deposition (continued)

c) Uranium with lesser sulphides in graphite units cut by uranium bearing structures.

All three of the above types of deposits would be well concealed by overburden and would only be discovered by diamond drilling. However, because of the "blind" nature of these types of deposits, drilling would have to be preceded by careful geophysical studies and geologic mapping to outline the important structures and rock types associated with the mineralization.

12.0 RECOMMENDATIONS

12.1 Stage 1

a) "A" grid should be extended to include Anomalies A1-A1'-A1"; A3-B4; and A4-A5-B3.

b) The grids should be geologically mapped in detail and grid stations soil sampled or rock chip sampled if no soil is available. Samples should be analyzed for copper, uranium and cobalt.

c) The copper showings around the A1-A1'-A1" should be accurately sampled in detail to determine the tenor of the mineralization.

12.2 Stage 2

a) More complete geophysical coverage should be obtained. This would include groundborne magnetometer, EM, IP, spectrometer, and radon gas surveys over areas of interest and reconnaissance geophysical coverage of the west of the property.

Stage 2 (continued)

b) Complete soil sampling of the property.

12.3 Stage 3

Pending results of the previous two stages, diamond drilling could be carried out.

12.4 Recommended Program 1981

It is recommended that the Stage 1 work be carried out during the 1981 field season. This can be achieved by a crew of one geologist and two samplers camped at Fairchild Lake. No helicopter support should be necessary.

Estimated costs are detailed on the following page.

ESTIMATED COSTS

Wages		
Geologist - 2 weeks	$1,500	
2 Samplers - 2 weeks	2,000	$ 3,500
Travel, Accommodation		
3 persons Vancouver to Mayo/Return	$1,500	
Accommodation - Mayo 3 days	450	
Fixed Wing - 2 Otter Flights	1,200	
Camp Cost, Food, etc.	1,600	
Radio, Expediting	450	5,200
Assays, etc.		
Assays	$ 600	
Soils - Analyse for Cu, Co, U 700 x $6.00	4,200	4,800
Report		1,000
Sub-Total		14,500
Contractor's Fees		2,500
TOTAL		$17,000

Respectfully submitted,

David A Yeager

D. A. Yeager, Geologist

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
CHARLES K. IKONA

C.K. Ikona, P. Eng.

14.0 ENGINEER'S CERTIFICATE

I, CHARLES K. IKONA, of 5 Cowley Court, Port Moody, in the Province of British Columbia, HEREBY CERTIFY THAT:

1. I am a Consulting Mining Engineer with offices at Suite 208, 850 West Hastings Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a Degree in Mining Engineering.

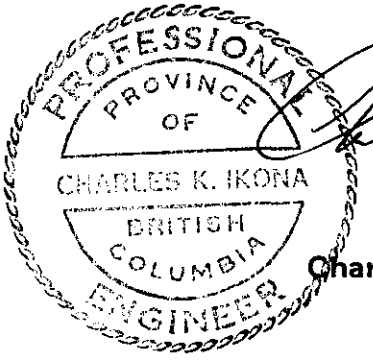
3. I am a member in good standing of the Association of Professional Engineers of British Columbia.

4. This report is based on previous geophysical and geological reports and on information gathered during 1978 and 1979 by programs conducted under my direction by Mr. D. Yeager, Geologist, and on my personal examination of the area in September 1978.

5. I have no interest in the property reported on herein, nor do I expect to acquire any such interest.

6. I consent to the use by Energex Minerals of this report in a Statement of Material Facts or other such document as may be required by the Vancouver Stock Exchange or Superintendent of Brokers.

DATED at Vancouver, B.C. this 1 day of June 1981.



Charles K. Ikona, P. Eng.

CANADA) In the matter of Preparation of orthophoto and compilation report on FAIR claims
)
)
)

TO WIT) On behalf of Energex Minerals Ltd.

I, C. K. Ikona for Pamicon Developments Ltd., of 208, 850 West Hastings Street, Vancouver, B.C. do solemnly declare that I have done or caused to be done the work on the orthophoto and compilation report on the FAIR MINERAL CLAIMS 106-C-13 Y.T.

The following expenses were incurred during the course of this work and in the compilation and reporting of the results:

Equipment Rentals	$
Expendible Field Supplies	
Office Supplies, Maps, Photos	
Drafting and Reproduction	50.00
Equipment and Machinery	
Supplies	
Food	
Expediting	
Freight	
Travel and Accommodation	
Prepaid Expenses	
Sundry	
Camp and Miscellaneous Fuels	
Camp Fixed Wing Support	
Overhead	
Wages	
Helicopter Support	
Assaying and Geochemistry	
Trenching	
Contracting Fees (Compilation of data)	500.00
Report Preparation	500.00
~~Not Assigned~~ Orthophoto	2 000.00
TOTAL	$ 3,050.00

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at Vancouver in the Province of British Columbia this 1st day of June, 1981)

A Commissioner for Oaths for, or Notary Public for the Yukon Territory.

DRILL HOLE LOG

LOCATION:	80N; 2 + 50E on Fair Group 1978 Programme "A" Grid
AZIM:	N/A
DIP:	N/A
ELEV:	
LENGTH:	239 feet (72.8m)
CORE SIZE:	AQ
STARTED:	NOTE - Hole drilled during 1974
COMPLETED:	by Menika Mining Ltd. as follow-up
PURPOSE:	to an airborne EM survey during a copper exploration programme.
CORE RECOVERY:	

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

HOLE No. DDH 1 | PAGE NO. 1 of 5

PROPERTY: FAIR CLAIMS 106-C-13 Y.T.

CLAIM NO:

SECTION:

LOGGED BY: D.A. Yeager

DATE LOGGED: October 13, 1978

DRILLING CO:

ASSAYED BY:

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
		NOTE: The present location of the core is the H.S. Bostock Core Library in Whitehorse, Y.T. where it was taken in the summer of 1977 by J. Morin, geologist for the Dept. of Indian Affairs & Northern Development, for permanent storage.					
		Many of the footage markers and core box labels were obliterated by weathering so as a result some of the depths are only approximate.					
		It is felt that the core was not logged at the time of drilling as it was obvious there was very little copper mineralization, the mineral sought at that time.					
0' (0m)	7' (2.1m)	no core - overburden					
7.0' (2.1m)	66.5' (20.3)	ARGILLACEOUS LIMESTONE limestone is finegrained, medium grey, massively bedded; the entire unit is coarsely fractured, with fragments ranging from 1/16" to 1" in size, fractures are filled with white sparry calcite; unit contains occasional blebs (up to 5% in places)					

DRILL HOLE LOG

LOCATION:		HOLE No. DDH 1	PAGE NO. 2 of 5
AZIM:	ELEV:	PROPERTY:	
DIP:	LENGTH: 239' (72.8m)	FAIR CLAIMS 106-C-13 Y.T.	
	CORE SIZE: AQ	CLAIM NO:	
STARTED:		SECTION:	
COMPLETED:		LOGGED BY: D.A. Yeager	
PURPOSE:		DATE LOGGED: October 13, 1978	
		DRILLING CO:	
CORE RECOVERY:		ASSAYED BY:	

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
		of light green chlorite with occasional disseminated specks of magnetite. The chlorite occurs both disseminated and in fractures.					
		8.75' (2.7) ground up core					
		16.5' (5.0) 2" zone of quartz - feldspathic fragments up to ½" in size in a matrix of chlorite with some sericite.					
		30.0' (9.1) start of 1.0' - zone of intense fracturing, core loss, large calcite filled vugs, some kaolinization.					
		32.0' (9.8) start of 6" zone of fractured and shattered limestone containing greater than 50% kaolinite, chlorite, biotite.					
	~~	32.5' (9.9) FAULT - 6" clay seam					
		33.0' (10.1) - 40.0' (12.2) rock continues to contain over 50% calcite, chlorite, kaolinite, biotite.					
	~~	64.0' (19.5) FAULT - clay seam, fractured rock, core loss.					
665'(20.3)	705'(21.5)	major FAULT ZONE					
		66.5' (20.3) to 67.0' (20.4) - loss of core, graphite seam with up to 1" fragments of quartz.					
		67.0' (20.4) to 68.0' (20.7) - argillaceous					

DRILL HOLE LOG

LOCATION:		HOLE No. DDH 1	PAGE NO. 3 of 5
AZIM:	ELEV:	PROPERTY:	
DIP:	LENGTH: 239' (72.8m)		FAIR CLAIMS 106-C-13 Y.T.
	CORE SIZE: AQ	CLAIM NO:	
STARTED:		SECTION:	
COMPLETED:		LOGGED BY:	D.A. Yeager
PURPOSE:		DATE LOGGED:	October 13, 1978
		DRILLING CO:	
CORE RECOVERY:		ASSAYED BY:	

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
		limestone.					
		68.0' (20.7) to 69.5' (21.2) - graphite seams					
		with 3" breccia zone at 69.0' (21.0) consist-					
		ing of rounded limestone fragments in a fine-					
		grained graphite ground mass.					
		69.5' (21.2) to 70.5' (21.5) - fine grained					
		argillaceous limestone.					
70.5'(21.5)	80.0'(24.4)	DIATREME BRECCIA BODY					
		Consists of up to 2" rounded limestone frag-					
		ments; up to ¼" fragments of calcite; matrix					
		is mostly calcite and kaolinite.					
		73.0' (22.3) one foot fragment of finely					
		crystalline limestone.					
		74.0' (22.6) large bleb of pinkish calcite					
		with disseminated specular hematite.					
80.0'(24.4)	81.0'(24.7)	LAMPROPHYRE DYKELET					
		Up to ¼" biotite books					
81.0'(24.7)	88.0'(26.8)	DIATREME BRECCIA BODY - same as 70.5' - 80.0'					
	~~	82.5' FAULT - clay gouge and graphite seam.					
		84.5' (25.8) graphite seam.					
	~~	87.0' (26.5) to 88.0' FAULT - no recovery,					
		some clay.					

DRILL HOLE LOG

LOCATION:		HOLE No. DDH 1	PAGE NO. 4 of 5
AZIM:	ELEV:	PROPERTY:	
DIP:	LENGTH: 239' (72.8m)		FAIR CLAIMS 106-C-13 Y.T.
	CORE SIZE: AQ	CLAIM NO:	
STARTED:		SECTION:	
COMPLETED:		LOGGED BY:	D.A. Yeager
PURPOSE:		DATE LOGGED:	October 13, 1978
		DRILLING CO:	
CORE RECOVERY:		ASSAYED BY:	

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
880'(26.8)	1500'(457)	SILICIFIED SILTSTONE					
		Siltstone is fine grained, medium grey,					
		coarsely fractured, with no visible bedding					
		features; the unit is heavily faulted and					
		brecciated resulting in extremely broken core					
		and poor core recovery.					
	~~	88.0' (26.8) to 89.0' (27.1) FAULT - clay					
		gouge with siltstone fragments.					
	~~	90.0' (27.4) to 92.0' (28.0) FAULT - clay					
		gouge.					
	~~	98.0' (29.9) to 99.0' (30.2) FAULT - chloritic					
		alteration with clay gouge.					
	≈≈≈≈≈	101.0' (30.8) to 107.0' (32.6) SHEAR ZONE -					
		clay gouge and poor recovery.					
	~~	109.5' (33.4) FAULT - clay gouge.					
		114.0' (34.7) to 120.0' (36.6) 35% recovery					
		120.0' (36.6) to 130.0' (39.6) 15% recovery					
		130.0' (39.6) to 139.0' (42.4) 25% recovery					
		140.0' (42.7) to 150.0' (45.7) 30% recovery					
⊗		141.0' (43.0) RADIOACTIVE ZONE of Feldspathized					
		siltstone with brick red hematization haloes					
		aroung blebs and specks of fine grained specu-					
		larite containing fine grained brannerite;					
		section contains sericite, chlorite, kaolinite;					
		total thickness of mineralized section unknown					
		as recovery is poor in this section and core					
		is extremely broken.					

DRILL HOLE LOG

LOCATION:		HOLE No. DDH 1	PAGE NO. 5 of 5
AZIM:	ELEV:	PROPERTY: FAIR CLAIMS 106-C-13 Y.T.	
DIP:	LENGTH: 239' (72.8m)	CLAIM NO:	
	CORE SIZE: AQ	SECTION:	
STARTED:		LOGGED BY: D.A. Yeager	
COMPLETED:		DATE LOGGED: October 13, 1978	
PURPOSE:		DRILLING CO:	
		ASSAYED BY:	
CORE RECOVERY:			

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
150(45.7)	239(72.8)	DIATREME BRECCIA BODY consists of up to 2" fragments of grey silicified siltstone in a partially kaolinized chloritic matrix.					
		150.0' (45.7) to 154.0' (46.9) 25% recovery					
		154.0' (46.9) to 159.0' (48.5) 70% recovery					
		159.0' (48.5) to 161.0' (49.1) 50% recovery					
		161.0' (49.1) to 170.0' (51.8) 60% recovery					
		170.0' (51.8) to 171.0' (52.1) 25% recovery					
		171.0' (52.1) to 173.0' (52.7) 25% recovery					
		173.0' (52.7) to 175.0' (53.3) 35% recovery					
		175.0' (53.3) to 180.0' (54.9) 30% recovery					
		180.0' (54.9) to 190.0' (57.9) 45% recovery					
		190.0' (57.9) to 195.0' (59.4) 100% recovery					
		193.5' (59.0) to 194.5' (59.3) Chlorite dyke					
		195.0' (59.4) to 200.0' (60.96) 70% recovery					
		200.0' (60.96) to 210.0' (64.0) 100% recovery					
		205.0' (62.5) specks of radioactive hematization					
		209.0' (63.7) specks of radioactive hematization					
		210.0' (64.0) to 222.0' (67.7) 85% recovery					
		222.0' (67.7) to 224.0' (68.3) 70% recovery					
		224.0' (68.3) to 234.0' (71.3) 80% recovery					
		234.0' (71.3) to 237.0' (72.2) 100% recovery					
		237.0' (72.2) to 239.0' (72.8) no recovery					
		END OF HOLE					

DRILL HOLE LOG

LOCATION:	120N; 120E, on Fair Group 1978 Programme "A" Grid
AZIM:	N/A
DIP:	N/A
ELEV:	
LENGTH:	113 feet (34.4m)
CORE SIZE:	AQ
STARTED:	NOTE - Hole drilled during 1974 by
COMPLETED:	Menika Mining Ltd. as follow up to
PURPOSE:	an airborne EM survey during a copper exploration programme.
CORE RECOVERY:	

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

HOLE No. DDH 2 | PAGE NO. 1 of 2

PROPERTY: FAIR CLAIMS 106-C-13 Y.T.

CLAIM NO:

SECTION:

LOGGED BY: D.A. Yeager

DATE LOGGED: October 13, 1978

DRILLING CO:

ASSAYED BY:

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
		NOTE: The present location of the core is					
		the H.S. Bostock Core Library in Whitehorse,					
		Y.T. where it was taken in the summer of 1977					
		by J. Morin, geologist for the Dept. of					
		Indian Affairs and Northern Development, for					
		permanent storage.					
		Most of the footage markers and core					
		box labels were obliterated by weathering					
		with the result that some of the depths					
		reported herein are only approximate.					
		It is felt that the core was not					
		logged at the time of drilling as it was					
		obvious there was very little copper mineral-					
		ization, the mineral sought at that time.					
0' (0m)	450'(137)	no core - over burden					
450'(137)	550'(168)	SILICIFIED SILTSTONE AND GRAPHITE DIATREME					
		BRECCIA BODY					
		Consists of up to 2" rounded siltstone					
		fragments in a matrix of coarse grained					
		platey graphite.					

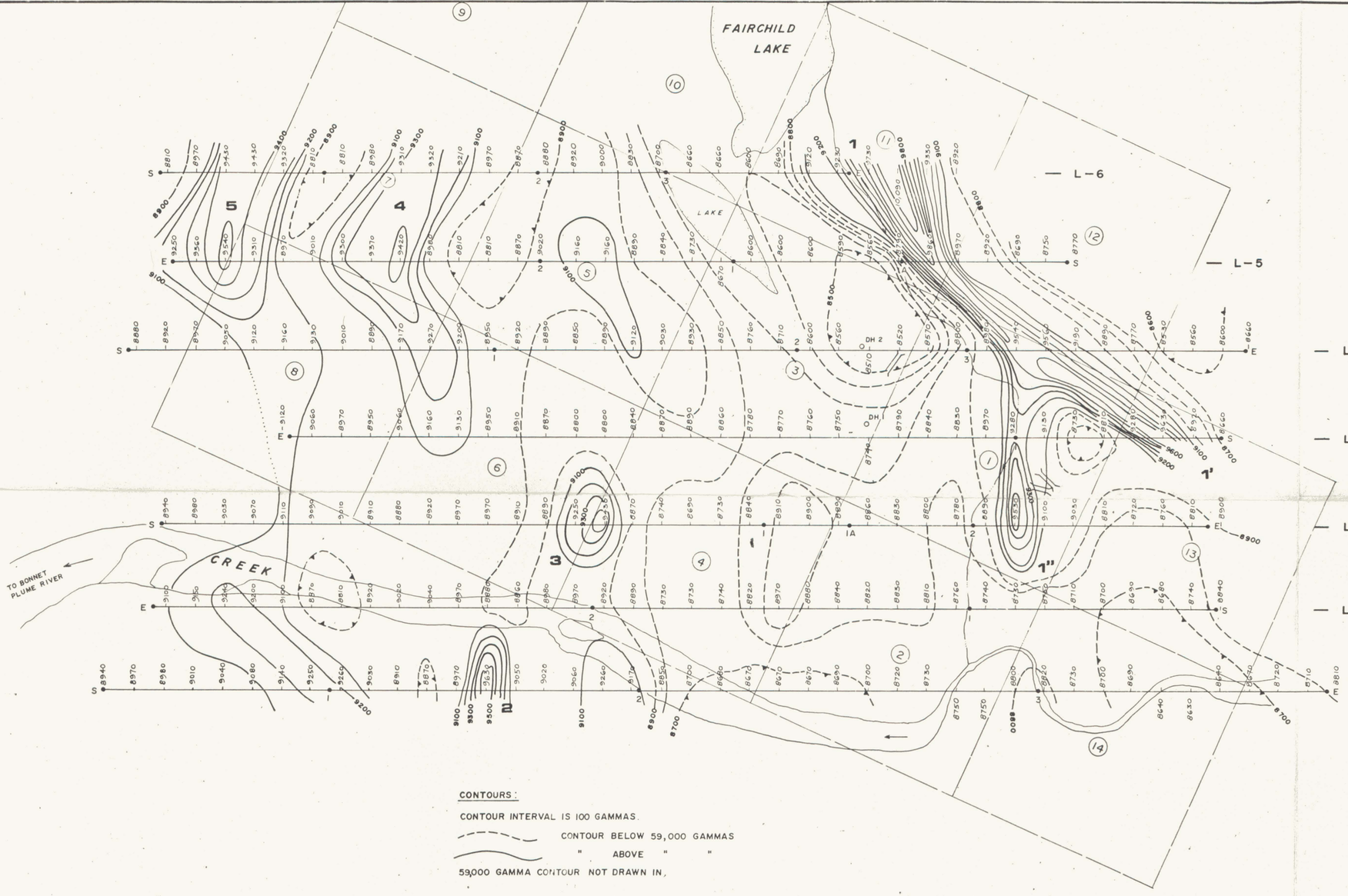
DRILL HOLE LOG

LOCATION:		HOLE No. DDH 2	PAGE NO. 2 of 2
AZIM:	ELEV:	PROPERTY:	
DIP:	LENGTH: 113 feet (34.4m)	FAIR CLAIMS 106-C-13 Y.T.	
	CORE SIZE: AQ	CLAIM NO:	
STARTED:		SECTION:	
COMPLETED:		LOGGED BY: D.A. Yeager	
PURPOSE:		DATE LOGGED: October 13, 1978	
		DRILLING CO:	
CORE RECOVERY:		ASSAYED BY:	

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	FOOTAGE FROM	FOOTAGE TO	LENGTH	ASSAYS
550'(168)	1130'(344)	SILICIFIED SILTSTONE BRECCIA BODY (diatreme)					
		Consists of up to 1" rounded to angular					
		silicified siltstone fragments in a matrix					
		of finely ground siltstone fragments.					
		END OF HOLE					



LEGEND

- TRENCH
- O DH 1 — DRILL HOLE
- CREEK
- L-2 — FLIGHT LINE
- 2 — TIE POINT
- S — START OF FLIGHT LINE
- E — END OF FLIGHT LINE
- (13) — CLAIM BOUNDARY & FAIR CLAIM No.

NOTE : TOPOGRAPHY SKETCHED FROM AIR PHOTO MOSAIC.
CLAIM BOUNDARIES ARE APPROXIMATE.

FEET
500 0 500 1000

TO ACCOMPANY GEOPHYSICAL REPORT BY D.G. MARK, GEOPHYSICIST

Figure 3
May 1981

CONTOURS:

CONTOUR INTERVAL IS 100 GAMMAS.

CONTOUR BELOW 59,000 GAMMAS

" ABOVE " "

59,000 GAMMA CONTOUR NOT DRAWN IN.

NOTE READINGS ARE IN GAMMAS.
50,000 GAMMAS IS SUBTRACTED FROM EACH READING
— 8740 READS 58,740 GAMMAS
MEAN BACKGROUND VALUE — 59,000 GAMMAS

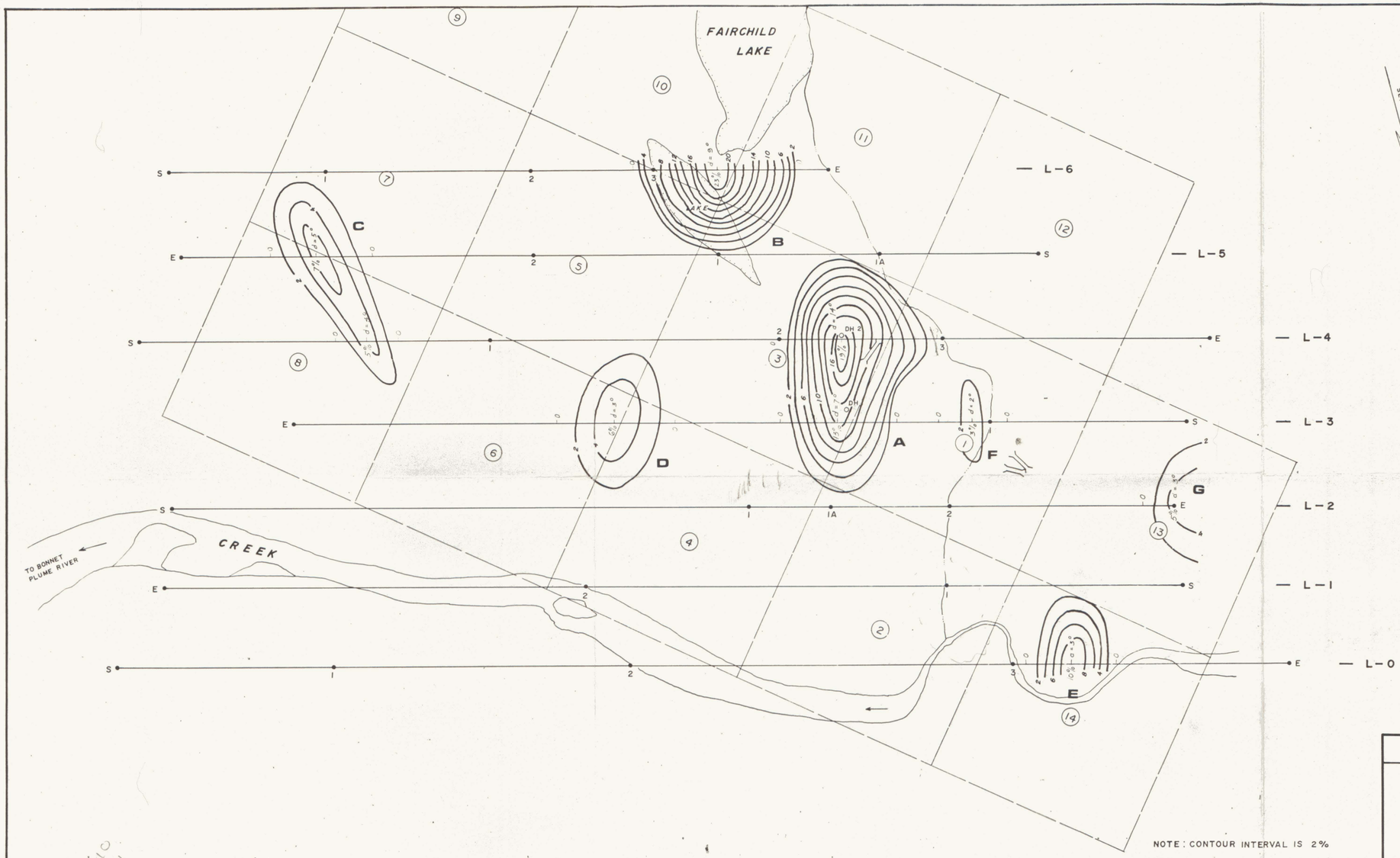
MENIKA MINING LIMITED

FAIRCHILD LAKE PROPERTY

BONNET PLUME RIVER AREA
YUKON TERRITORY
NTS 106/C-13

AIRBORNE MAGNETIC SURVEY
DATA & CONTOURS

DRAWN	SCALE	JOB No.	DATE	SHEET
PDT DRAFTING SERVICES	1" = 500'	75 — 24	MARCH 1975	1



NOTE : CONTOUR INTERVAL IS 2%

SEATTLE TRANSMITTER 18.6 KHz — 315° E

MAGNETIC 35° E

N

LEGEND

~25%	FIELD STRENGTH (PERCENT)
~α=14°	DIP ANGLE (DEGREES)
	TRENCH
O DH 1	DRILL HOLE
	CREEK
L-2	FLIGHT LINE
2	TIE POINT
S	START OF FLIGHT LINE
E	END OF FLIGHT LINE
(13)	CLAIM BOUNDARY & 'FAIR' CLAIM No.

NOTE : TOPOGRAPHY SKETCHED FROM AIR PHOTO MOSAIC.
CLAIM BOUNDARIES ARE APPROXIMATE.

FEET
500 0 500 1000

TO ACCOMPANY GEOPHYSICAL REPORT BY D.G. MARK, GEOPHYSICIST

Figure 4
May 1981

MENIKA MINING LIMITED

FAIRCHILD LAKE PROPERTY

BONNET PLUME RIVER AREA
YUKON TERRITORY
NTS 106/C-13

AIRBORNE E.M. SURVEY
DATA & CONTOURS

DRAWN	SCALE	JOB No.	DATE	SHEET
PDT DRAFTING SERVICES	1" = 500'	75 — 24	MARCH 1975	2

Figure 5 May 1981

Energex Minerals Ltd

FAIR Claim Group.
'A' GRID
U/T. Ratios.

0 40 80 metres.

Pamicon Developments Ltd.

Drawn	Project	Date	Fig.

559 000 E

560 000 E

558 000 E

557 000 E

556 000 E

7 203 000 N

7 202 000 N

RIVER

FAIRCHILD LAKE

CAT ROAD

CLAIM BOUNDARY

A GRID

B GRID

A1 A2 A3 A4 A5 A6 A7

B1 B2 B3 B4 B5 B6 B7

C1 C2 C3

D1 D2 D3 D4 D5

DDH

U

Cu

204 000 N

203 000 N

202 000 N

556 000 E

557 000 E

559 000 E

560 000 E

BONNET PLUME RIVER

LEGEND

- 1974 Airborne Mag.
- 1974 Airborne VLF-EM
- 1978 U/Th Spectrometer
- 1978 U in Soils
- ▲ Mineral Showings
  - U - Uranium
  - Cu - Copper
- Trenches
- ● DDH Diamond Drill Collars

ENERGEX MINERALS LTD.

FAIR MINERAL CLAIMS

NTS 106-C-13

YUKON TERRITORY

COMPILATION STUDY

SCALE 1:5000

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE NO.
J.W.	FAIR	MAY '81	10