MOUNTAINEER MINES LTD. - PAN OCEAN OIL LTD.

JOINT VENTURE

SUMMARY REPORT

ON THE

KIWI LAKE HOLDINGS

IN THE

FAIRCHILD PROJECT AREA

N.T.S. 106 E 1 and 2

BY

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090440

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

$ 420,000.00

J. A. Main

Resident Geologist or
Resident Mining Engineer

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

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

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1.0 INTRODUCTION

An extensive exploration program was carried out on the KIWI LAKE Holdings of the Mountaineer-Pan Ocean Joint Venture in 1978. This program resulted from discoveries of uranium mineralization made during regional programs conducted by the Joint Venture in 1976 and 1977. For a detailed discussion of these programs reference is made to the Mountaineer-Pan Ocean Joint Venture Summary Report - Quartet/Fairchild Project 1977 by PAMICON DEVELOPMENTS LIMITED.

The KIWI LAKE Holdings of the Joint Venture total 885 mineral claims lying to the north, east and west of KIWI LAKE and described more fully in section 3.0, this report.

During the 1978 program PAN OCEAN OIL LIMITED acted as operator of the project with actual operation of the program contracted by PAMICON DEVELOPMENTS LIMITED of Vancouver.

The program consisted of geological mapping, prospecting and geochemical surveying over the entire claim block along with more detailed work in the area of a few of the more promising showings. This detailed work encompassed the establishment of picket grids for magnetometer, spectrometer and alpha-nuclear surveys along with extensive trenching and diamond drilling.

This report attempts to summarize the results of this program and recommends possible additional work.

2.0 LOCATION AND ACCESS

The Joint Venture holdings in the KIWI LAKE area consist of 937 contiguous mineral claims located in nine claim blocks. The holdings cover the north end of KIWI LAKE and extend in an irregular shape approximately 10 miles west, 6 miles east and up to 4 miles south and 2 miles north of the lake.

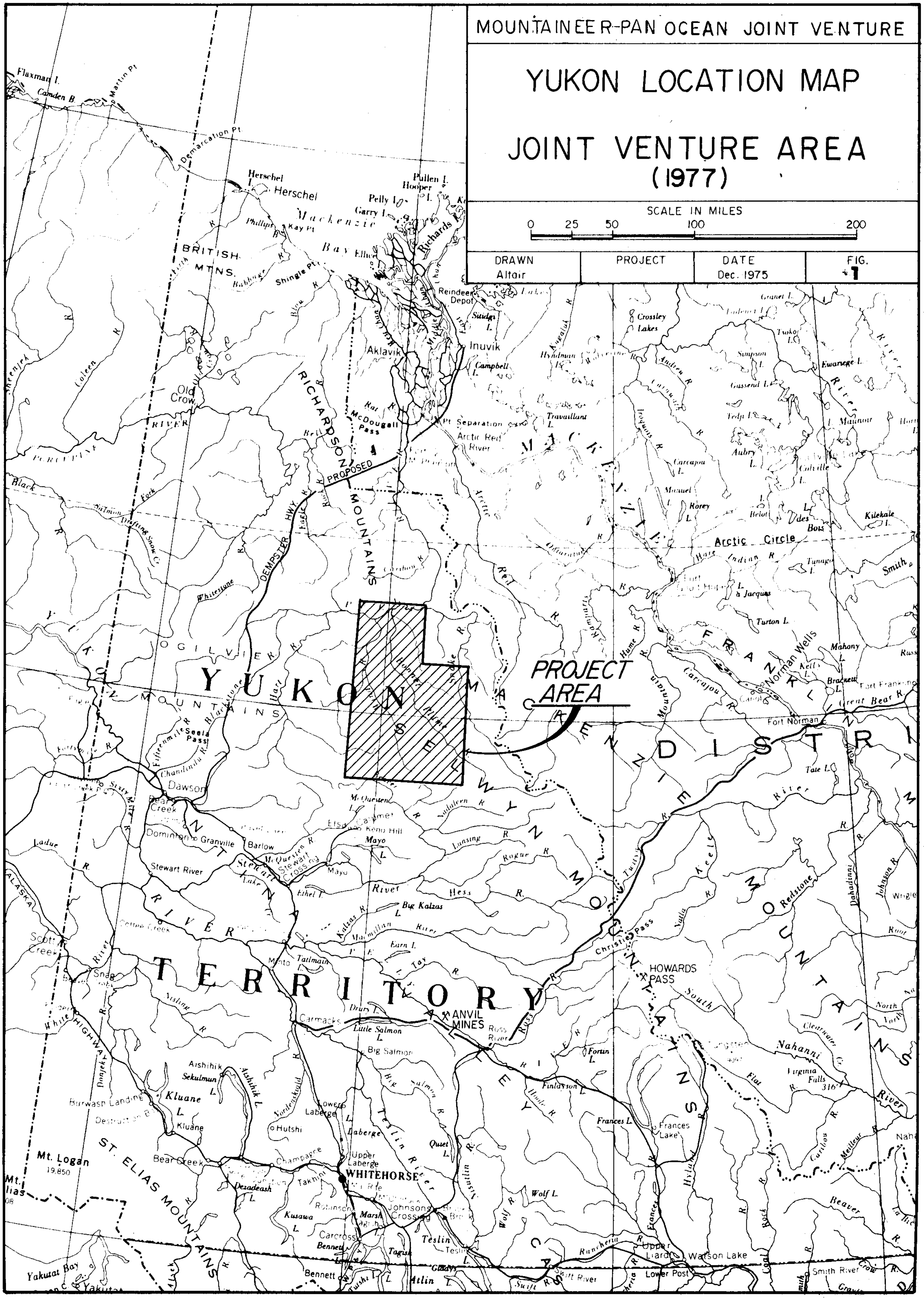
KIWI LAKE is situated at approximately 63°12'N Latitude and 134°35'W Longitude in the north central Yukon Territory. (Fig. 1).

Access to the area is by float-equipped plane to KIWI LAKE from the community of MAYO, Y.T., a distance of 120 miles. Both helicopter and fixed wing aircraft, as well as full expediting services, are available in MAYO.

3.0 LIST OF CLAIMS

See Fig. 2 for the various group boundaries.

CLAIM NAMES	GRANT NUMBERS
CLAM 1-40	YA16013-YA16052 inclusive
CLAM 41-54	YA16535-YA16548 inclusive
DEER 1-36	YA15391-YA15426 inclusive
FOX 1-36	YA14443-YA14478 inclusive
FROG 1-14	YA15363-YA15376 inclusive
FROG 17-30	YA15377-YA15390 inclusive
FROG 31-38	YA16527-YA16534 inclusive
LOON 1-12	YA7160-YA7171 inclusive
LOON 13-24	YA16549-YA16560 inclusive
LOON 25-232	YA16561-YA16768 inclusive
MOSQUITO 1-24	YA15806-YA15829 inclusive
OWL 1-20	YA14823-YA14842 inclusive
POOL 1-335	YA16769-YA17103 inclusive


MOUNTAINEER-PAN OCEAN JOINT VENTURE
YUKON LOCATION MAP
JOINT VENTURE AREA
(1977)
SCALE IN MILES
0 25 50 100 200
DRAWN
Altair
PROJECT
DATE
Dec. 1975
FIG.
1
PROJECT AREA
YUKON
TERRITORY
BRITISH MTNS.
RICHARDSON MOUNTAINS
OGILVIE MOUNTAINS
SELWYN MOUNTAINS
MACKENZIE MOUNTAINS
FRANKLIN MOUNTAINS
ST ELIAS MOUNTAINS
DEMPSTER HWY. PROPOSED
Herschel
Inuvik
Aklavik
Old Crow
Dawson
Mayo
Keno Hill
Elsa
Carmacks
ANVIL MINES
HOWARDS PASS
WHITEHORSE
Watson Lake
Norman Wells
Fort Norman
Arctic Circle
Mt. Logan
19,850

3.0 LIST OF CLAIMS (cont'd.)

CLAIM NAMES	GRANT NUMBERS
WOLF 1-60	YA14183-YA14242 inclusive
LOON 233-284	YA30757-YA30808 inclusive

4.0 General Description of Program, Survey Methods and Instruments Employed

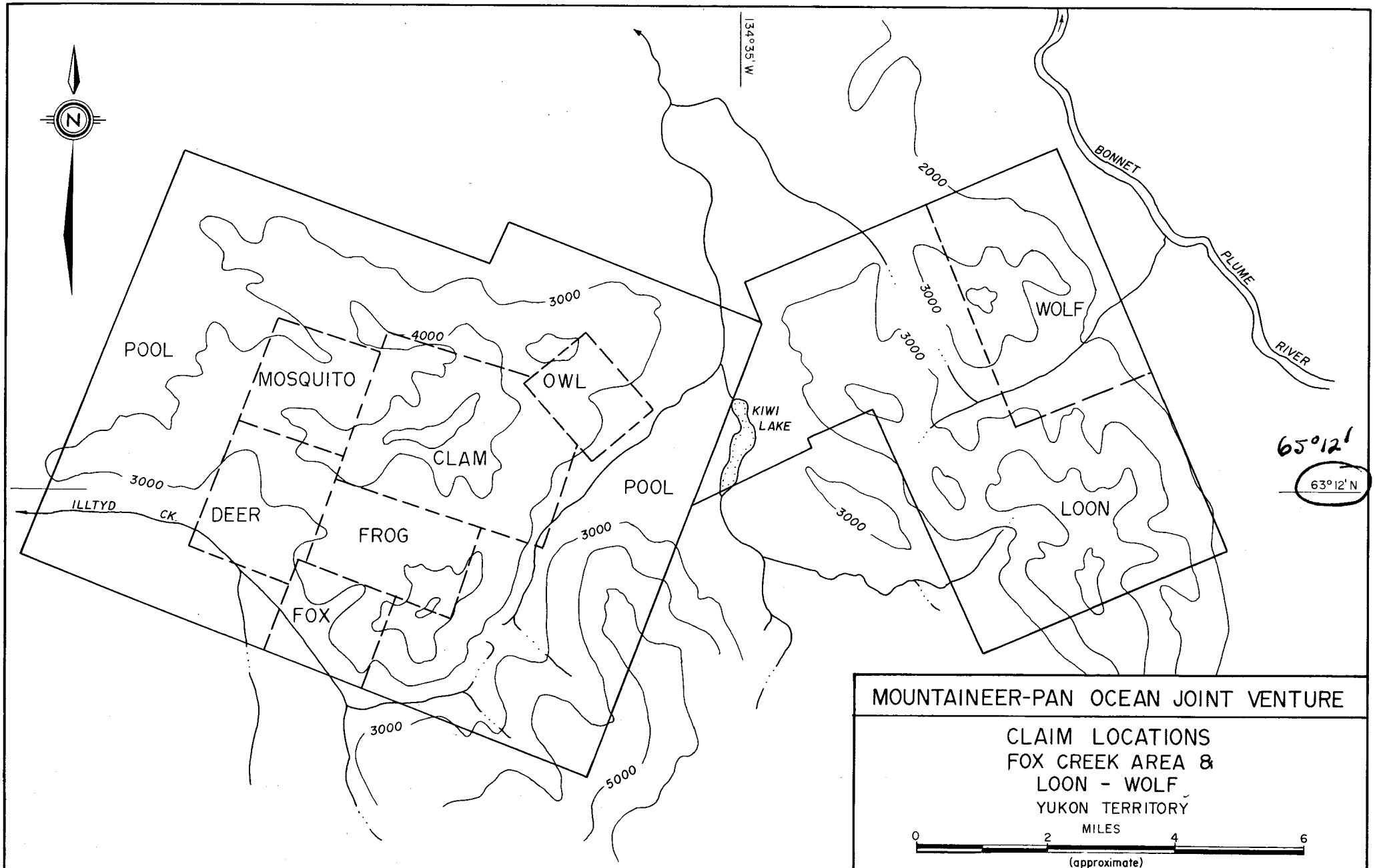
The joint venture holdings were subject to an extensive exploration program employing most of the traditional exploration methods as well as several peculiar to uranium exploration.

Control for the program was provided by 1:10000 scale orthophotos prepared with 20 meter contour intervals for the property. Both a plane table and transit were used in areas of the property for more accurate control.

The entire group was prospected and mapped geologically on a scale of 1:10000. Regional geochemical samples were collected from most drainage systems.

Within restricted areas of the group, notably the LOON and DEER claims, picket grids were established using transit and chain control. These grids were used for a magnetometer survey, a discriminating spectrometer survey, an alpha-nuclear radon gas survey, and geochemical survey as well as yielding control for more detailed geological mapping.

An extensive hand trenching program was carried out concurrently with the above surveys in areas of mineralization discovered during the program.



MOUNTAINEER-PAN OCEAN JOINT VENTURE

CLAIM LOCATIONS
FOX CREEK AREA &
LOON - WOLF
YUKON TERRITORY

MILES
0 2 4 6
(approximate)

NTS 106 E 1&2

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
Altair	Quartet-Fairchild	DEC. 1977	2

A total of 2120 feet of diamond drilling was completed. Two holes were drilled on the LOON claims and six holes on the DEER claims. The drilling was contracted to E. Caron Diamond Drilling Limited of Whitehorse, Y.T. who provided a Longyear "Super 38" wireline drill. NQ core was used at the start of the drilling, but difficult conditions dictated switching to HQ core for most of the contract.

The program was supported by a full-time 206-B helicopter from a base camp at KIWI LAKE. This camp was supplied by float-equipped fixed wing aircraft from MAYO, Y.T. Both a standard Otter and turbo Beaver were chartered for this purpose on a casual basis from the Trans-North Turbo Air, Mayo Base.

Partial mobilization, notably of fuel, drill and camp equipment was accomplished in late March and early April while it was still possible to operate the above planes on the ice at KIWI LAKE.

The actual program ran from May 1st to October 12th, 1978.

INSTRUMENTS EMPLOYED

- Exploranium discriminating spectrometer (model D.I.S.A. 300)
- Alpha Nuclear alphameters with digital readout
- Toko open face Engineers transit
- K & E optical plane table
- McPhar model M700 fluxgate magnetometer
- Mt. Sopris model 1000 c Gamma Ray Counter-Recorder with a G-375A standard combination probe

5.0 GEOLOGY

5.1 REGIONAL SUMMARY

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° 00'W and Latitude 65°00'N. (See Fig. 3 Regional Geology Map - taken from 1977 Summary Report).

Recent G.S.C. stratigraphic work by Bell and Delaney (1976), has designated these Helikian and older rocks as the Wernecke supergroup subdivided into Fairchild, Wernecke 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 Wernecke 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 Wernecke 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.

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

5.2 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 Wernecke groups 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.

For a more detailed description of Regional Lithology and Structure, the reader is referred to the 1977 Joint Venture Summary Report.

5.3 LOON - POOL STRATIGRAPHY

For the purposes of this report the stratigraphy of the Wernecke Group has been omitted and the discussion is concerned only with the Fairchild Group rocks. The Fairchild Group stratigraphy can be discussed by dividing the group into three subdivisions consisting of upper, middle and lower sedimentary rocks.

i) Upper Subdivision

The youngest rocks of the group make up the upper subdivision and consist of a massively interbedded sequence of orange and brown weathering dolomite and black shale. The dolomite units contain thin white-to-grey chert beds and lenses. A white-to-grey cherty limestone marker unit up to 12 meters in thickness is also part of this upper subdivision. The diagnostic feature of the

upper subdivision is the occurrence of the massive bluff forming orange and brown dolomite and this part of the Fairchild Group is easily recognizable when the rocks exist as massive homogeneous units. However, these sediments can also occur as thin-to-medium bedded black shale with lenses and thin beds of dolomite. The thickness of the upper subdivision is approximately 250 meters.

ii) Middle Subdivision

Proceeding down section the middle subdivision consists primarily of siltstone, phyllitic siltstone, slate, phyllite and schist. A quartzite and a rock unit termed metasomatite are also part of the middle subdivision and are present primarily in the LOON area. Typically, the metamorphic grade increases downsection, but some discrepancies are present when units occur out of their expected stratigraphic positions. The siltstone commonly exists at the top of the middle subdivision, but in some areas the metamorphic rocks appear above the siltstone. The discrepancies are explained mainly by three possibilities: a) faulting has shifted the units out of their stratigraphic positions;

b) increases in metamorphic grade are associated with thermal zones created by faulting and intrusive breccias.

c) finally, due to facies changes in the sediments, the siltstone could have been more susceptible or less susceptible to metamorphism. For example, where the siltstone was compositionally richer in quartz or calcite, it appeared to be more resistant

to metamorphic change.

The thickness of the middle subdivision is difficult to determine because of excessive faulting and the lack of an observable geologic cross-section, but from work done in the region the maximum thickness of this subdivision has been approximated at 500 meters.

The diagnostic features of the middle subdivision are the presence of greenschist facies metamorphic rocks and the absence of any widespread calcareous rocks.

iii) Lower Subdivision

The lower subdivision of the Fairchild Group and the oldest rocks of the LOON-POOL area consists of thinly interbedded siltstone and carbonate, thin-to-thick-bedded calcareous siltstone, and generally thin-bedded siltstone. These rocks have been repeatedly deposited at irregular intervals throughout the lower subdivision with the thinly interbedded homogeneous units of siltstone and carbonate being the most abundant. The non-calcareous siltstone sections of this subdivision are usually less than 70 meters in thickness and can be easily confused with the siltstone of the middle subdivision. However, the abundance of the associated calcareous rocks designates the siltstone to the lower subdivision. The total thickness of the lower subdivision is several hundred meters and the diagnostic feature is the "ribbed" appearance caused by the recessive weathering carbonate units.

TABLE 5.3.1

LITHOLOGIC CORRELATIONS

GROUP		UNIT		DEER Drill Core		DEER No. 1 Grid		LOON No. 1 Area		LOON No. 2 Grid	
INTRUSIVE ROCKS											
		Diorite	9			Lamprophyre Dyke					
		Intrusive Breccia	8							Breccia ,	7
		Metasomatite: Breccia Altered Wall-rock	8A							Metasomatite	8
		Quartz veins	99	Quartz veins Units 99, A, B, C.	99	Quartz veins Units 99, B	99	Quartz veins	99		
SEDIMENTARY ROCKS											
QUARTET or WERNECKE	2	Interbedded blackslates and argillites	2A								
FAIRCHILD Undivided Unit	1	Black shale	1k								
		Limestone	1j								
		Dolomite	1i							DOLOMITE	6
		Quartzite	1h								
		Siltstone	1g	Upper nonmetamorphic series Units --and-- Lower nonmetamorphic series Unit	UNM 1-3 UNM 4	Nonmetamorphic siltstones	1g	Slate, silicified siltstones	4A,B	Siltstone	4
		Altered; "metasomatite"	1f					Silicified siltstones, slate	4C,D		
		Phyllitic and/or Schistose siltstones	1e	Upper metamorphic ser. Units --and-- Lower metamorphic ser. Units	UM 5-7 LM 8-1	Upper metamorphic ser. Lower metamorphic ser.	1e-UM 1e-5 1e-LM 1e-8	Phyllitic siltstone	2	Phyllitic siltstone	2
		Slate	1d					Slate	3	Slate	3
		Phyllite	1c					Phyllite	1	Phyllite	1
		Schist	1b			Schist	1b				
		- Lower siltstone - Calcareous siltstone - Ribbed siltstone and carbonate	1a								

Breccia bodies intrude throughout the entire section and exist as resistive weathering structures measuring several meters to several hundred meters across. Diorite intrusives are present to a lesser degree and exist primarily as dykes and sills. Numerous small occurrences of bull quartz veins intrude primarily within the phyllite-schist part of the middle subdivision.

5.4 LOON-POOL GEOLOGY AND STRUCTURE

The LOON-POOL area is dominated by Fairchild Group rocks exposed on ridges immediately east and west of KIWI LAKE in the northeast portion of the Wernecke Mountains.

The LOON area lies to the east of KIWI LAKE with the topographic expression consisting of one main north-south trending ridge with several branching ridges. The main ridge length is approximately 8 kilometers and the total area covers approximately 32 square kilometers.

Outcrop exposure is very good along the main ridge and branching ridges, but side hills primarily consist of long steep talus slopes with very limited outcrop.

The LOON rocks generally strike east-west and the sediments exhibit a general north-south stratigraphic progression along the main LOON ridge. The youngest sediments are exposed at the northern end of the ridge and they consist of the massive beds of dolomite and shale of the upper subdivision rocks. Progressing south along the ridge the sediments exposed are the

siltstone and metamorphic units of the middle subdivision and finally at the very southern end of the ridge are the oldest rocks consisting of the calcareous siltstone and the ribbed siltstone and carbonate units of the lower subdivision.

The POOL area lies to the west of KIWI LAKE and encompasses an area slightly larger in size than that of the LOON. The main ridge of the POOL area trends east-west and extends for approximately 8 kilometers. The distant impression is one of a rolling topography as compared to the rugged topography of the LOON area.

Rock exposure is relatively good, but most geologic mapping is confined to talus interpretations and actual outcrop exposure is limited to approximately 10% of the area.

The general rock distribution of the POOL area is for the youngest rocks consisting of the Upper Subdivision dolomite and slate to surround and dip away from a central core of older sediments. The vast central portion of the POOL area primarily consists of the middle subdivision metamorphic units of phyllite, schist, phyllitic siltstone and slate. The western portion of the POOL area has been subjected to increased tectonic activity and the lower subdivision rocks of calcareous siltstone and ribbed siltstone and carbonate occur in proximity with the younger rocks of the upper subdivision.

The same stratigraphic and lithologic units occur in both the LOON and the POOL areas. The units have been generally described in the stratigraphy section

of the report, but more mention should be made of the "host" siltstone unit which occurs near, or at the top of, the middle subdivision. This unit is most commonly described as a fine-grained, thin-bedded siltstone usually characterized by a banded appearance caused by alternating lighter and darker green bedding. In mineralized areas the siltstone is either bleached pale green by silicification or is chloritized to a dark green. The siltstone occurrence in the eastern POOL area can be compositionally more siliceous and coarser-grained grading to a sandstone and metamorphism of this coarser-grained rock can produce a gneissic appearance with irregular layers of subparallel coarse biotite.

Except for variations discussed in the stratigraphy section the metamorphic grade increases downsection and the degree of regional metamorphism is the same in both the LOON and POOL areas. The metamorphic rocks exist in the middle-to-lower part of the middle subdivision and the highest grade metamorphic unit is described as a quartz, chlorite, sericite schist of the greenschist facies. Numerous bull quartz veins and lenses up to 2 meters in width have intruded the metamorphic units. The bull quartz veins seem uninteresting themselves, but their occurrence near mineralized showings indicates a spatial association with the mineralized coarse-grained quartz-feldspar veins and are perhaps late stage products of the same.

The frequency of intrusive breccia occurrences is greatest within the middle subdivision rocks and

alteration zones associated with breccias and/or faulting are present in both the LOON and POOL areas, but the intensity of alteration is greatest in the LOON area. Here, intrusive breccias have produced wallrock alteration halos consisting of bleaching and silicification up to 30 meters into the surrounding country rock.

The quartzite units of the LOON probably resulted both from regional metamorphism and from intense silicification of the middle subdivision siltstone. Massive chloritization of the middle subdivision rocks is also common in the LOON area. On a larger scale, alteration in this area consists of complete metasomatism of the middle subdivision siltstone by hydrothermal solutions and the unit has been separately designated as a metasomatite.

As mentioned earlier, alteration of the POOL rocks is much less severe and primarily consists of bleaching, silicification, chloritization and hematization of the middle subdivision siltstone and the weakly metamorphosed units.

Both the LOON and POOL areas have been subjected to extreme pressures and although crenulations and small scale folding are present, it is evident that the primary mode of deformation occurs as multiple fractures and faults. A definite association exists between faulting and the occurrence of the breccia intrusives. The intensity of faulting and deformation is greatest within that part of the stratigraphy composed of rocks of the upper part of the middle subdivision.

A dark green medium-grained diorite occurs in the region primarily as dykes and sills within the middle subdivision sediments. The diorite is probably the youngest rock in the area and no association has been discovered between this intrusive and the uranium mineralization.

6.0 POOL - LOON GRID PROGRAMS

6.1 LOON GRID NO. 1

The LOON 1 grid was established in June and July, 1978 to cover a series of uranium showings discovered during the summer of 1976.

A surveyed baseline with 15 M station intervals was run between 4 + 80 S and 5 + 55 N. Crosslines were then run at 120 M intervals east and west from the baseline. All crosslines are marked by picket stations at 15 M intervals.

A total of 5.61 KM of line was located over the grid area. For distribution of the lines and fill in lines see Fig. 5 which also includes the results of an altimeter survey.

The above grid was used as control for geophysical surveys as well as detailed geological mapping and prospecting.

6.1.0 GENERAL GEOLOGY

The LOON No. 1 grid is underlain by a repeating sequence of northeast striking metasediments which dip moderately to the north (see Fig. 6). In general, the sequence consists of a central 'package' of siltstones and slates (Units 3 and 4) lying between a series of phyllites (Unit 1) and phyllitic siltstones (Unit 2).

Abundant faulting, particularly on the north end of the grid displaces strata for distances up to and exceeding 100 meters.

Medium grey weathering phyllites (Unit 1) are exposed along both east and west margins of the grid and grade locally to a phyllitic siltstone (Unit 2) in the northern extremes of the grid. Adjacent to the phyllites, finely-banded slates (Unit 3) vary in colour from a medium-grey through brown-grey to a grey-green. Contacts from the phyllites to the slate are roughly transitional over 5 meters along the west and southeast parts of the grid. However, in many cases, the contacts along the northeast margins of the grid are more structurally controlled with faults juxtaposing phyllites with rocks of the central package (Units 4A-4D).

The centrally-located section of metasediments (Unit 4), consists of interbedded buff-to-tan coloured silicified siltstones and light green-grey weathering slates. An attempt to differentiate this unit according to percentage composition of silicified siltstones (Unit 4D), and slates (Unit 4A), has been made. Transition zones have been designated Units 4C or 4B for rocks having a greater portion of silicified siltstone or slate respectively.

Since the phyllite (Unit 1) is normally seen beneath the siltstones in the regional section, a tectonic relationship between the siltstones and the apparent overlying phyllites would normally be expected. As no evidence of faulting was obvious between the upper Unit 3 slate and phyllite, it is suspected that structurally the grid area consists of a large recumbant isoclinal fold whose axial plane approximates bedding. The repetative

nature of the sediments in the east central portion of the grid lends support to such a theory although no overturning was noted.

Uranium mineralization has been found to occur along the principal joint surfaces, mainly within the massively bedded, strongly silicified siltstone unit.

6.1.1 MINERALIZATION

During the 1978 programme detailed prospecting and geological mapping on the LOON 1 grid uncovered further uranium and minor copper mineralization.

Two modes of uranium mineralization occur on the grid. The first type consists of quartz-feldspar pegmatite dikes and stringers containing coarse crystals of brannerite. These dikes and stringers, which cross-cut the metasediments, originate mainly in the inter-bedded silicified siltstones/slate unit. Uranium mineralization was noted to continue into the wallrock for up to 20 cm.

A second mode of uranium mineralization possibly related to the dikes is found to occur along joint surfaces within the silicified siltstone unit. The principal joint surface (J_1), is not mineralized while (J_2), a weaker joint system is selectively mineralized. The strike of J_2 ranges from 070^0 to 100^0 with dips to the south. Chloritization, feldspathization and associated uranium mineralization in the form of brannerite occurs to a maximum observed thickness of 25 cm

roughly along the plane of the joint surface.

A combination of vein and joint type mineralization has been observed sporadically along a strike length of 900 meters within the south and central portion of the grid.

6.1.2 MAGNETOMETER SURVEY

Within the grid area the magnetometer values range from 1900 gammas to 3248 gammas (see Fig. 7).

Simple contouring at 100 gamma intervals shows a definite decrease in magnetic intensity in the southwestern portion of the grid from L 1 + 20 S to L 4 + 80 S. The lines in the far north and south portions of the grid are widespaced and line bias in contouring is expected. However, parallel contours and flexures indicate a 040° lineation passing in the vicinity of L 0 + 60 S, station 0 + 30 E.

The intensity of readings increase slightly in the east central grid and north grid areas. The showings near L 0 + 60 S, 0 + 45 E also lie within an area of higher magnetics.

The high in the east central grid roughly conforms to the silicified siltstone units although the strike extensions to the southwest is not reflected as a magnetic high.

6.1.3 SPECTROMETER SURVEY

The total count spectrometer values on the LOON grid range from 109 cps. to 291 cps. The grid

values which were contoured at 10 cps. intervals from 150 cps. up to peak values are presented on Fig 8. The wide spacing of the lines in the north and south portions of the grid causes line bias in contouring. However, several zones of high values can be recognized. The most significant area lies along the base line from 0 + 90 S to 1 + 50 S, and east to 0 + 60 E on lines 0 + 90 S and 1 + 20 S. This zone of higher readings surrounds the main showings and appears to be part of a northeast-southwest trend which extends off the south end of the grid and dies out to the north near L 2 + 40 N, 0 + 90 E.

Other areas of higher values occur at L 3 + 60 S 2 + 40 W; L 0 + 60 N, 0 + 15 W to L 1 + 20 N, 0 + 30 W and L 2 + 40 N, 1 + 80 E to L 3 + 60 N, 2 + 10 E.

6.1.4 ALPHA NUCLEAR SURVEY

The alpha nuclear radon gas values in counts per hour are plotted on Fig. 9. The normalized values have been calculated and are plotted adjacent to the actual cph. readings. Wide spacing of the lines and the limited number of sample locations prevents meaningful contouring of the data. Contouring of a preliminary nature has been attempted in the central portion of the grid at 0.1 intervals from .6 to 1.0 and the 1.0 contour drawn in the remainder of the grid area.

The results of the contouring seem erratic and are considered inconclusive at this time,

6.1.5 GEOCHEMICAL SURVEY

Soil samples for geochemical analysis of

uranium were collected from all stations on the grid area. The rugged nature of the terrain is talus-forming and very little soil development occurs throughout the area. The majority of samples must, therefore, be considered as residual material derived from near outcrop or decay of transported talus.

The sample values which range from 0.5 ppm U to 12 ppm U and plotted and contoured on Fig. 10. Since the values were quite low, contour intervals of 1, 2, 4 and 6 were chosen. The 1 ppm contour outlines an elongate zone roughly parallel to and lying on the west side of the baseline. Peak values within the zone are 4.0, 6.0, 12.0 and 11.0 ppm which occur at L 4 + 80 S, 0 + 45 W; L 0 + 60 S, 0 + 60 W; L 1 + 20 N, 0 + 30 W and BL 4 + 05 N respectively. The zone extends on both sides of the ridge at L 0 + 00 and appears to be related to a phyllite member which lies above the host silicified siltstone unit. The extension of the zone between Lines 2 + 40 S and 4 + 80 S is likely an expression of down-slope migration.

A second area of greater than 1 ppm lies in the extreme SE portion of the grid. This area lies directly downslope from the main showing area near L 0 + 60 S, 0 + 45 E, consequently, downslope migration is suspected as its cause.

6.1.6 DISCUSSION OF SURVEY RESULTS

The rugged topography within the LOON grid made reliable sampling and survey techniques both

difficult to conduct and interpret.

The alpha nuclear survey was severely hampered by talus and near outcrop conditions at most stations. Due to the extreme variation in ground conditions it is expected that the diffusion rate of radon gas would be erratic and data treatment, therefore, difficult.

Although dealing primarily with residual soils, the geochemical survey outlines several areas of anomalous values. These areas lie mainly to the west of the baseline and coincide with spectrometer highs. Most of the high values south of the showing near L 0 + 60 S, 0 + 45 E appear to be downslope migration.

The values from the spectrometer survey are not high, but they successfully outline the main showing area and are also coincident with an area of above background magnetic readings. Northeast from the showing area the intensity of spectrometer readings decrease and the silicified siltstone unit is expressed as a low trough. The same general area is reflected as a slight magnetic high.

The three areas of high spectrometer readings and soil results at L 1 + 20 N, 0 + 45 W; BL 4 + 05 N and L 1 + 50 S, 1 + 80 E have been prospected, but no mineralization discovered.

It is a possibility that the anomalous zones are caused by high background phyllites.

However, during 1977, it was postulated that known mineralization and quartz veining flooded out at

the Unit 3 and 4 contact near L 0 + 60 S, 0 + 45 E. The anomalies at L 1 + 20 N, 0 + 45 W and BL 4 + 05 N fall approximately 100 M west and directly downslope from the Unit 3 and 4 contact. Since the slope and bedding attitudes are both steep to the northwest, it is possible that the anomalies are related to subsurface mineralization associated with the contact.

6.1.7 TRENCHING

During the 1978 programme, trenching was carried out on the LOON property using explosives and hand tools. Figure 11 shows the location of the LOON 1 - 5 trenches on the LOON Plane Table Geology Map. Trenching was carried out in an attempt to further delineate surface mineralization discovered during the 1977 programme.

Dimensions and other particulars of the five LOON trenches are listed below in Table 6.1.7 - I.

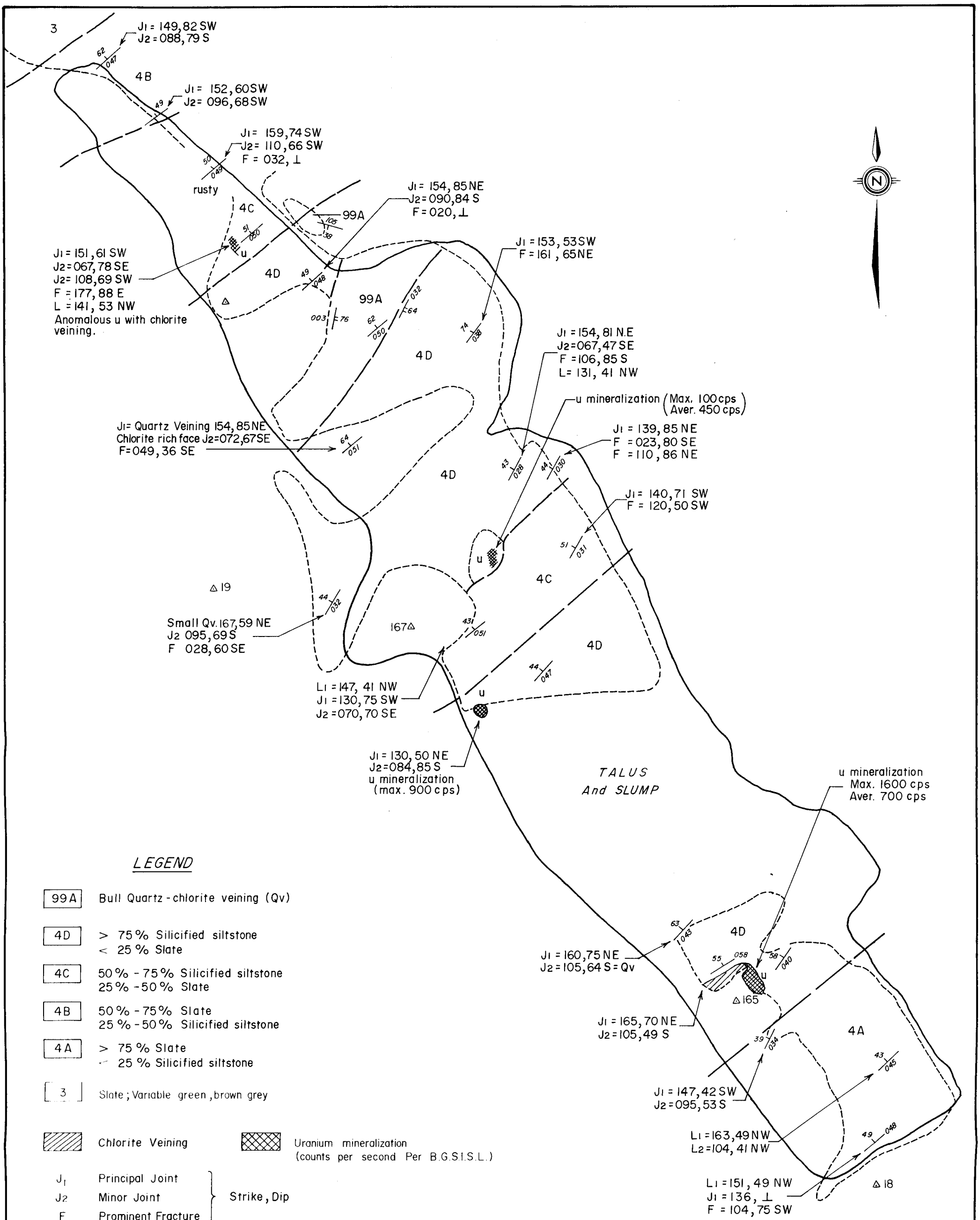
TABLE 6.1.7 - I

Trench No.	Length	Average Width	Average Height of Backwall	Comments
1	34m	3m	2.2m	explosives employed
2	19m	5m	1.8m	explosives employed
3	19m	3.5m	1.6m	explosives employed
4	5m	2m	1.4m	hand tools used only
5	9m	1.5m	0.6m	hand tools used only

Trench No. 1 (see figure 12) is underlain by lithological Units 3, 4A and 4D and exposes the largest, and most impressive, uranium mineralized vein surface seen to date on the LOON property. The 5 x 3 meter exposed vein surface in essence occurs along the secondary joint surface (J_2) as described earlier in Section 6.1.1. The vein surface is divided into a chlorite-rich zone and a feldspathized zone by a shear zone trending 157°. Observed thickness of the mineralized vein averages 15 cm; with strike and dip approximately 076° and 33° to the south respectively. A hand held BGS ISL scintillometer showed the entire vein surface area was above detection limits (10,000 cps.).

Trench No. 2 is underlain entirely by the silicified siltstones (Unit 4D). Due to the initial failure to uncover uranium mineralization, the trenching was abandoned. Later, when the trench was widened to incorporate the DDH L-78-1 setup, brannerite mineralization, both within a quartz-feldspar vein and along a J_2 surface, was encountered along the trench's western backwall. This uranium mineralization appears spatially related to vein and joint type mineralization encountered in trench No. 5 immediately to the north.

Trench No. 3 (see figure 13) is mainly underlain by the silicified siltstone unit. Slates are found at either end of the trench. Uranium mineralization is weak, sporatic and of the "joint surface" nature. A maximum of 1600 counts per second (BGS ISL) was recorded on the trench floor showings. A 1 meter wide quartz-



LEGEND

99A	Bull Quartz - chlorite veining (Qv)
4D	> 75 % Silicified siltstone < 25 % Slate
4C	50 % - 75 % Silicified siltstone 25 % - 50 % Slate
4B	50 % - 75 % Slate 25 % - 50 % Silicified siltstone
4A	> 75 % Slate < 25 % Silicified siltstone
3	Slate ; Variable green , brown grey

Chlorite Veining

Uranium mineralization (counts per second Per B.G.S.I.S.L.)

J_1	Principal Joint	Strike, Dip
J_2	Minor Joint	
F	Prominent Fracture	
L_1	Principal Lineation	Trend, Plunge
L_2	Weak Lineation	

12/042 Bedding Attitude

40/037 Quartz Vein Attitude

18/△ Survey Station

Outcrop Limit

Geologic Fault

Geologic Contact

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON CLAIMS

TRENCH No. 3 - GEOLOGY

YUKON TERRITORY
N.T.S. 106 E/1
METRES

0 1/2 1 2 3 4

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
Altair	Fairchild	Nov. 1978	13

chlorite vein, located in the west part of the trench, trends approximately northeast and is notably barren of uranium mineralization. Note that the same vein occurs in trench No. 4 and has associated uranium mineralization.

Trench No. 4 was dug by hand in an attempt to trace uranium mineralized bull quartz-chlorite ± feldspar boulders found below the trench. A small, but significant grade of uranium mineralization was intersected, and in spots measured over 10,000 counts per second on the hand-held scintillometer (BGS ISL). Both vein and "joint surface" type uranium mineralization were seen.

Trench No. 5 is underlain entirely by the silicified siltstone unit. Uranium mineralization was encountered along a 2 meter length on the trench backwall. "Joint surface" type mineralization consisting of disseminated brannerite in a quartzo-feldspathic matrix contrasts with the relatively barren quartz-feldspar vein that is also found in the trench.

6.1.8 DRILLING AND ASSAYING

INTRODUCTION

The LOON diamond drill program commenced on July 10, 1978 and was completed on July 26, 1978. Two holes were drilled, DDH L-78-1 and L-78-2, for a total of 101.5 meters (333 feet). Transcripts of the detailed drill logs are presented in Appendix I of this report. Locations of the drill holes are shown on Figure 11 (LOON - Plane Table Geology) at a scale of 1:250. Drill

hole cross sections have been constructed at a scale of 1:250 and are presented in Figures 14 and 15.

Considerable physical difficulties were encountered during the drilling of these holes and it was decided upon completion of DDH L-78-2 to transfer the drill to the BONNET PLUME Coal Project prior to commencing the DEER drill program.

The program was considered to be exploratory in nature and was initiated to test uranium mineralized quartz-feldspar veins exposed in trenches and in outcrop on the LOON No. 1 grid.

DDH L-78-1

A swarm of fracture filling mineralized veins were recognized during surface mapping in Trench 1 and to the east of Trench 2. In this area the host "J2 joint system strikes 079° and dips 42° to the south. L-78-1 was therefore collared central to this swarm and directed to the north-northwest at minus 60° in order to cross-cut the trend of the fractures.

The hole was collared in Unit 4 silicified siltstones and slates (see Fig. 14), and continued in this unit for the entire length of the hole (41.8 meters). A major sand seam was encountered at 38.7 meters which proved to be very difficult to drill due to excessive bit wear and jamming of the drill rods due to plugging of the hole by the rock particles. Drilling was discontinued at 41.8 meters, still within the sand seam. A radiometric probe of the hole was conducted which indicated no radio-

A

A'

1370 m.

1360 m.

1350 m.

1340 m.

1330 m.

1320 m.

1310 m.

1300 m.

Unit 1

Unit 3

Unit 4

GAMMAS 100 0

4D

interbedded 4B & 4D

4B

4D

4C

qtz.

interbedded 4B & 4D

4D

4B

interbedded 4D & 4A

4B

4D

transitional 4B → 4C

4D

4B

4D

interbedded 4B & 4D

4B

4D

transitional 4B — 4C

4D

transitional 4B — 4C

4D

low recovery mostly 4B

10m

20m

30m

342°
162°

DDH L-78-1

az: 342°
dip: -60°
elev.: 1345.4m A.S.L.
depth: 41.8m (137')
casing: 4.3m (14')
started: July 10, 1978
completed: July 17, 1978
radiometric log: July 17, 1978
core size: N.Q

LITHOLOGY

INTRUSIVE STAGE

99A Quartz-chlorite vein

SLATES AND SILTSTONES

4A,B Slate with silicified siltstone interbeds
- 4A: ≥ 75 % slate, ≤ 25 % siltstone
- 4B: ≥ 50 % slate, ≤ 50 % siltstone

4C,D Silicified siltstone with slate interbeds
- 4C: ≥ 50 % siltstone, ≤ 50 % slate
- 4D ≥ 75 % siltstone, ≤ 25 % slate

SLATE

3 Variably coloured - grey, brown, green; frequently banded.

PHYLLITIC SILTSTONE

2

PHYLLITE

1 Variably coloured - green, grey; occasionally slatey.

NOTE: Geology is shown in the left hand portion of the drill sections; radioactive zones in the right hand portion. The radiometric logs are shown beside the drill holes; values are in gammas where one gamma represents 1 count per second (total count) recorded on a Mt. Sopris Model 1000 C Gamma Ray Counter equipped with a G-375 A Standard Combination Probe.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

SECTION A-A'

DDH L-78-1

LOON CLAIMS

N.T.S. 106-E-2

YUKON TERRITORY

0 5m 10m 15m 20meters

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
Altair	Fairchild	Nov. 1978	14

metric anomalies; in addition, no radioactive minerals were observed in the core.

The following data summarizes the pertinent drilling information:

TABLE 6.1.8 - I

DDH L-78-1	STATISTICS
azimuth	342°
dip	-60°
collar elevation	1,345.4 m. (4414 ft.)A.S.L.
collar location	LOON No. 1 grid 0 + 66 S 0 + 54 E
depth	41.8 m. (137 ft.)
casing	4.3 m. (14 ft.)
started	July 10, 1978
completed	July 17, 1978
radiometric log	July 17, 1978
core size	NQ
core recovery	90%

DDH L-78-2

The fracture filling mineralized veins mapped below the west end of Trench 1, as well as in Trenches 3 and 4, exhibited an apparently random orientation. It was felt, therefore, that if L-78-2 was collared uphill and to the north of this swarm, and drilled at a minus 55° dip to the south, it would likely cut the vein system not far below surface.

The hole commenced in Unit 3 slates (see Fig. 15); encountered Unit 4 silicified siltstones and slates at 15.7 meters; and continued in Unit 4 until the end of

B

B'

1370 m.

1360 m.

1350 m.

1340 m.

1330 m.

1320 m.

1310 m.

1300 m.

GAMMAS 0 100 200 300

Unit 1

Unit 3

Unit 4

3
99A
3
4B
99A
no core
4C
99A
4A
4D
4B
4A
3
4D
4A
no core
4A
4D
4A
4D
4A
4D
4A
4D
4A
4D
4A
4D
4A
4D
4A

20m

40m

60m

020°
200°

DDH L-78-2

az: 200°
dip: -55°
elev.: 1360 m A.S.L.
depth: 59.7m (196')
casing: 29.9m (98')
started: July 17, 1978
completed: July 26, 1978
radiometric log: July 26, 1978
core size: N.Q.

LITHOLOGY

INTRUSIVE STAGE

99A Quartz-chlorite vein

SLATES AND SILTSTONES

4A,B Slate with silicified siltstone interbeds
- 4A: ≥ 75 % slate, ≤ 25 % siltstone
- 4B: ≥ 50 % slate, ≤ 50 % siltstone

4C,D Silicified siltstone with slate interbeds
- 4C: ≥ 50 % siltstone, ≤ 50 % slate
- 4D ≥ 75 % siltstone, ≤ 25 % slate

SLATE

3 Variably coloured - grey, brown, green; frequently banded.

PHYLLITIC SILTSTONE

2

PHYLLITE

1 Variably coloured - green, grey; occasionally slatey.

NOTE: Geology is shown in the left hand portion of the drill sections; radioactive zones in the right hand portion. The radiometric logs are shown beside the drill holes; values are in gammas where one gamma represents 1 count per second (total count) recorded on a Mt. Sopris Model 1000 C Gamma Ray Counter equipped with a G-375 A Standard Combination Probe.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

SECTION B-B'

DDH L-78-2

LOON CLAIMS

N.T.S. 106-E-2

YUKON TERRITORY

0 5m 10m 15m 20meters

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE	FIGURE:
Altair	Fairchild	Nov. 1978	15

the hole (59.7 meters). A major sand seam was encountered at 27.9 meters which, as in L-78-1, proved extremely difficult to drill. At 29.7 meters both the rods and casing were withdrawn in order to replace the bit and casing shoe. The hole was reamed to 9.6 meters at which point the drill deflected out of the old hole and started drilling new core. The bit re-entered the original hole at 14.9 meters and once again encountered the sand seam at 28.0 meters. No core was recovered between 28.4 meters and 34.1 meters, however, good core recovery commenced at that point and continued to the end of the hole. A radiometric probe of the hole was conducted which indicated a radiometric anomaly of 300 counts per second at 18.5 meters. No radioactive minerals were observed in the core.

The following data summarizes the pertinent drilling information:

TABLE 6.1.8 - II

DDH L-78-2	STATISTICS
azimuth	200°
dip	-55°
collar elevation	1360.0 m. (4461.9 ft.)A.S.L.
collar location	LOON No. 1 grid 0 + 50 S 0 + 24 E
depth	59.7 m. (196 ft.)
casing	29.9 m. (98 ft.)
started	July 17, 1978
completed	July 26, 1978
radiometric log	July 26, 1978
core size	NQ
core recovery	66%

INTERPRETATION

It is apparent that the sand seam encountered in both drill holes is a major structural feature in the LOON trench area. A re-examination of the trenches revealed a strong shear zone previously only mapped in Trench No. 4 as a mineralized quartz/feldspar vein. Stratum contours constructed on the shear using surface and drill hole information showed a vertical structure striking 070° through Trenches 1, 3, and 4 which was subsequently confirmed on the ground.

Although the shear generally hosts quartz/feldspar veining and is uranium mineralized at several localities, it is essentially barren over much of its surface exposure. As well, there was no radiometric response in the shear in DDH L-78-2. As L-78-1 did not drill completely through the zone and the probe cannot pass through the equipment immediately above the bit, it was not possible to test the zone radiometrically. There is presently no direct evidence suggesting that this vertical shear is a feeder for the vein swarms present in the area.

A number of small veins and fractures perpendicular to the core axis were intersected in DDH L-78-1, however, there was no indication of mineralization either in core or radiometrically. Although the mineralized fracture set mapped in the vicinity of the drill collar is pervasive, it appears that the many mineralized gashes within the set are only in the order of several meters

square in area. This may be due to local cross faulting and/or simply the erratic nature of the mineralized veins.

Two large quartz/chlorite veins were intersected in DDH L-78-2 at 16.8 meters and at 19.3 meters. In addition, a zone of no core recovery was encountered at 17.7 meters immediately beneath the upper vein. All three of these structures are nearly coincident with the radioactive anomaly at 18.5 meters. As no radioactive minerals or alteration was seen in the core, it is presumed that the uranium mineralization occurred in the zone of no recovery.

It is important to note that both of the quartz/chlorite veins, the cave, and the radioactive zone all occur vertically within three meters of the contact with the overlying Unit 3 slates. This tends to support one of the early theories regarding mineralization controls in the LOON No. 1 showings in which it was felt that the slate unit forms an impermeable "cap" layer which resulted in flooding and mineralization of available jointing and fracture sets in the underlying rocks.

ASSAYING

Eight rock geochemistry samples were taken from L-78-1 core; the highest value was 1.5 parts per million uranium. An equal number were taken from L-78-2 with 1.5 parts per million uranium again being the highest value. Eleven assay samples were taken from L-78-2. The samples assayed less than detection limits for uranium, cobalt and gold.

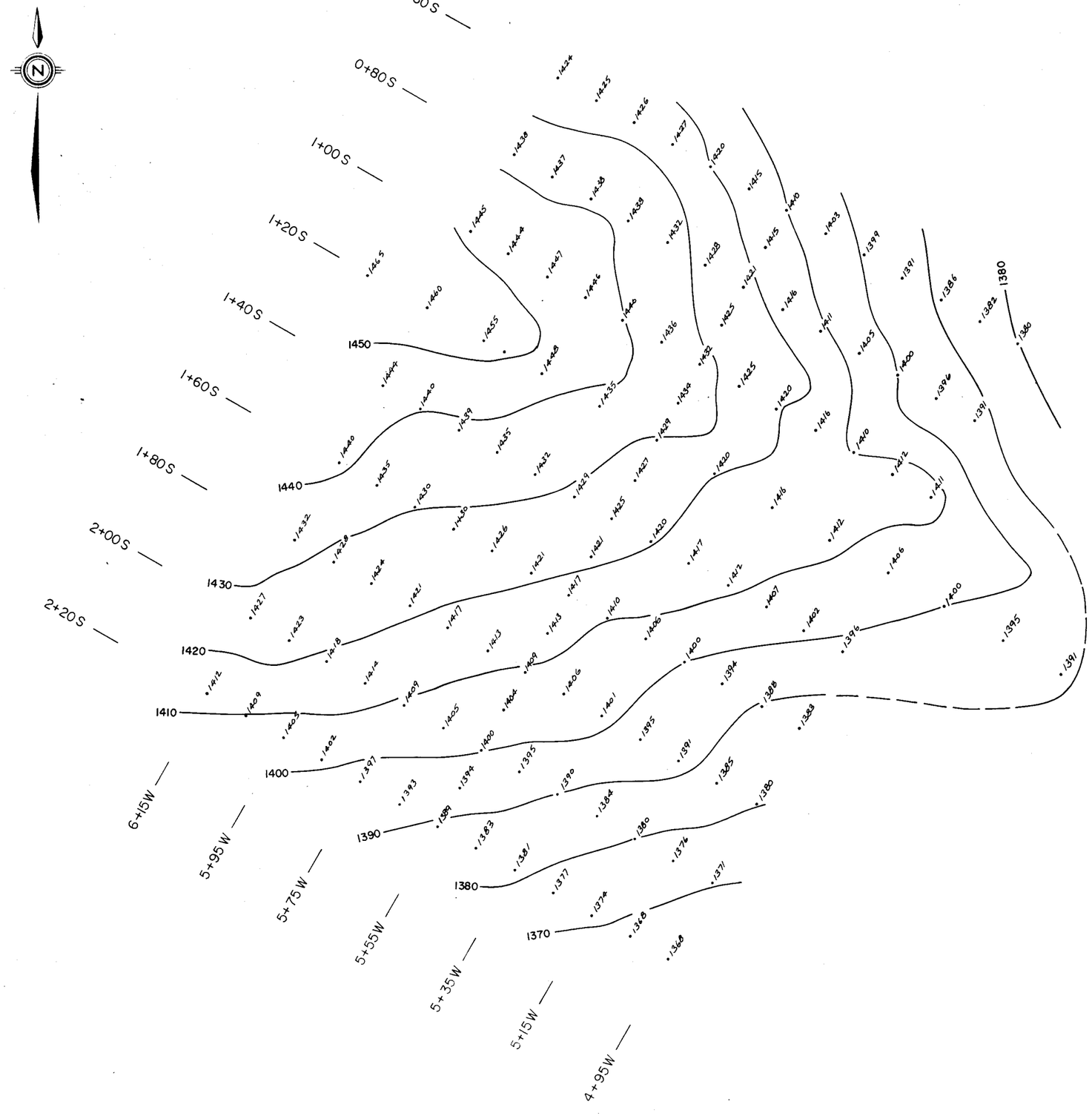
6.2 LOON No. 2 GRID

During July and August, 1978 the LOON No.2 grid was established to cover an area of interesting mineralization lying northwest of the main LOON showings. Line 1 + 20 S of the LOON No. 1 grid was extended to 5 + 50 W where a NE - SW baseline was located from 2 + 20 S to 0 + 60 S (Line coordinates correspond to LOON No. 1 grid). Cross lines were then run at 40 m. spacings from 4 + 95 W to 6 + 15 W. Picket stations at 20 m. intervals were located on the baseline and all crosslines. The rectangular-shaped grid covers an area some 320 m. by 260 m. and contains some 1.24 km. of line. See topographic Map Fig. 16. Magnetometer, spectrometer and altimeter surveys, as well as detailed geologic mapping, were then conducted over the entire grid area.

6.2.0 GEOLOGY

Eight recognizable lithological units have been identified on the LOON 2 grid. Complex structural events, such as folding, faulting and brecciation have altered the original mineralogy and stratigraphy of this upper middle section of Fairchild rocks. See Fig. 17.

The oldest group of rocks, including phyllites, phyllitic siltstones, slates and argillaceous siltstones (Units 1-4) cover eastern, western and southern portions of the LOON 2 grid. Complex structural and metamorphic grade boundaries interrupt the normal stratigraphic relationships between members of this sequence and other rocks found on the LOON 2 grid.



MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS

GRID No. 2

TOPOGRAPHIC CONTOURS

10 M. NTERVALS

PAMICON DEVELOPMENTS LTD.

SCALE 1:1000

m. 10 0 10 20 30 50 m.

DRAWN	PROJECT	DATE	FIG.
Altair	Fairchild	Nov. 1978	16

The phyllites (Unit 1) are exposed mainly on the eastern portion of the grid. These weather variable green-grey to brownish-green and exhibit a well-developed S_1 foliation surface. The unit is occasionally slatey and magnetite-bearing and locally has scintillometer counts up to twice background.

Adjoining Unit 1 to the south and overlying it stratigraphically is a green-olive-brown to green-grey weathering phyllitic siltstone (2). This unit is lower in metamorphic grade with compositional banding generally preserved, but demonstrating strong crenulations.

Continuing up section (and with decreasing metamorphic grade) variably coloured slates (Unit 3) are exposed along the west-central portion of the grid. Two unique varieties of slate are separated from each other by a northeast trending fault. Both varieties exhibit weak compositional banding and occasional phyllitic partings. The westernmost slate is greenish-brown and variably magnetite-bearing. East of the fault slates are greenish-grey and barren of magnetite.

Light green weathering argillaceous siltstones interbedded with occasional slate (Unit 4) are assumed to lie stratigraphically above the slates. The massively bedded, weakly banded, argillaceous siltstones are exposed mainly in the northwest quadrant of the LOON 2 grid.

Overlying the lower package of detrital sediments is a thin group of interbedded dolomites and carbonaceous clastics. The clastics include a finely laminated, massively bedded, carbonaceous, banded white

LITHOLOGY

- 8 - Metasomatite (Breccia altered wallrock)
- 7 - Breccia (undifferentiated)
- 6 - Brown dolomite / dark grey siltstone
- 5 - White and dark grey siltstone
- 4 - Green argillitic siltstone
- 3 - Greenish brown slate / slatey siltstone
- 2 - Phyllitic siltstone
- 1 - Phyllite

SYMBOLS

- Outcrop limits
- Trench boundary
- Grid line and survey station
- Geological contact (approx., defined)
- Fault (approx., assumed)
- 50 - Bedding attitude
- Foliation attitude
- Area of uraniun mineralization
- Inferred Synclinal fold Axis.

Contour Interval – 10 meters

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS
GRID No. 2

GEOLOGY MAP

NTS.10c E/1

PAMICON DEVELOPMENTS LTD.

SCALE 1:1000
m. 10 0 10 20 30 50 m.

DRAWN	PROJECT	DATE	FIG.
Arter	Fairchild	Nov. -76	17

and dark grey siltstone (Unit 5). The youngest sediments exposed on the property are orange-brown weathering, massively bedded, laminated dolomites (Unit 6). Minor interbeds of medium grey weathering siltstone occur within this unit.

Two large, roughly concordant diatreme breccia bodies (Unit 7) intrude and eliminate much of the section on the LOON 2 grid. The contact relationships between the massively bedded, argillaceous siltstone and the breccia has led to zones of anomalous uranium mineralization, and to the formation of metasomatites (Unit 8).

Uranium mineralization on the LOON No. 2 grid is confined mainly to the contact area between the argillaceous siltstone and the breccia. Two types of uranium mineralization occur.

Secondary uranium mineralization occurs along discrete fracture surfaces in one small area located within the western portion of the trench. Work to date has failed to uncover extensions to this zone.

The second type of mineralization is located at the eastern end of the trench and is characterized by coarse, bleb-like crystals of brannerite. The brannerite is found within a matrix of dark green chlorite altered wallrock and decreases in intensity eastwards.

6.2.1 MAGNETOMETER SURVEY

The magnetometer survey returned a range of values from 2047 to 3056 gammas. See Fig. 18. Contouring of the values at 100 gamma intervals from 2100 to 3000

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS

GRID No. 2

MAGNETOMETER SURVEY

CONTOUR INTERVAL 100 GAMMAS

PAMICON DEVELOPMENTS LTD.

SCALE 1:1000

m. 10 0 10 20 30 50 m.

DRAWN	PROJECT	DATE	FIG.
Altair	Fairchild	Nov 1978	18

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS

GRID No. 2

SPECTROMETER SURVEY

TOTAL C.P.S.

PAMICON DEVELOPMENTS LTD.

SCALE 1:1000

m 0 10 0 20 30 50 m

DRAWN	PROJECT	DATE	FIG
Allair	Fairchild	Nov. 1978	19

gammas shows the central portion of the grid to be of relatively low magnetic intensity compared to the SW and NE portions of the grid.

The area of mineralization near 1 + 40 S, 5 + 55 W lies within the area of lower values.

6.2.2 SPECTROMETER SURVEY

A plot of the spectrometer readings in counts per second (Fig. 19) shows a range of values from 100 to 208 cps. with one peak value of 500 cps. The values were contoured at 10 cps. intervals from 130 cps. to 200 cps. The contours show three areas of relatively high values separated by lower troughs roughly conforming to a northerly trend. The peak value of 500 cps. coincides with surface mineralization at 5 + 55 W, 1 + 10 S.

6.2.3 CORRELATION OF DATA AND DISCUSSION

The extreme ruggedness of the topography and ground conditions made the geophysical surveys both difficult to conduct and interpret. Since the majority of the grid area was variably talus-covered and the remainder outcrop, the spectrometer results are somewhat in question. However, the anomaly in the central portion of the grid covers an area of fracture-controlled brannerite, pitchblende (?) and associated secondary uranium mineralization.

The peak value of 500 cps. is an expression of the intensity of cps. from mineralized outcrop while the surrounding values ranging from 163 cps. to 193 cps.

reflect possible talus-covered mineralization. The elongate N-S dimension of the anomaly is considered to be caused by a downslope migration of mineralized float while the anomalous reading at 1 + 00 S, 5 + 45 W best fits a possible northeasterly extension of the known mineralization.

Although scattered float occurrences have been found elsewhere on the grid, the broad areas of higher values in the SW and NE portions of the grid are considered to be a reflection of high background phyllites.

The magnetometer data showed little coincidence with the spectrometer data in the area of the mineralized zone. The only feature worthy of noting is a low trough trending from the vicinity of the main showing area northeasterly through 0 + 60 S, 5 + 35 W. This trend coincides with the possible extension of the spectrometer data mentioned above. The phyllites in the SW and NE grid areas are reflected as magnetic highs.

Due to the terrain, talus cover and lack of soil development, no radon gas or geochemical surveys were conducted.

6.2.4 TRENCHING

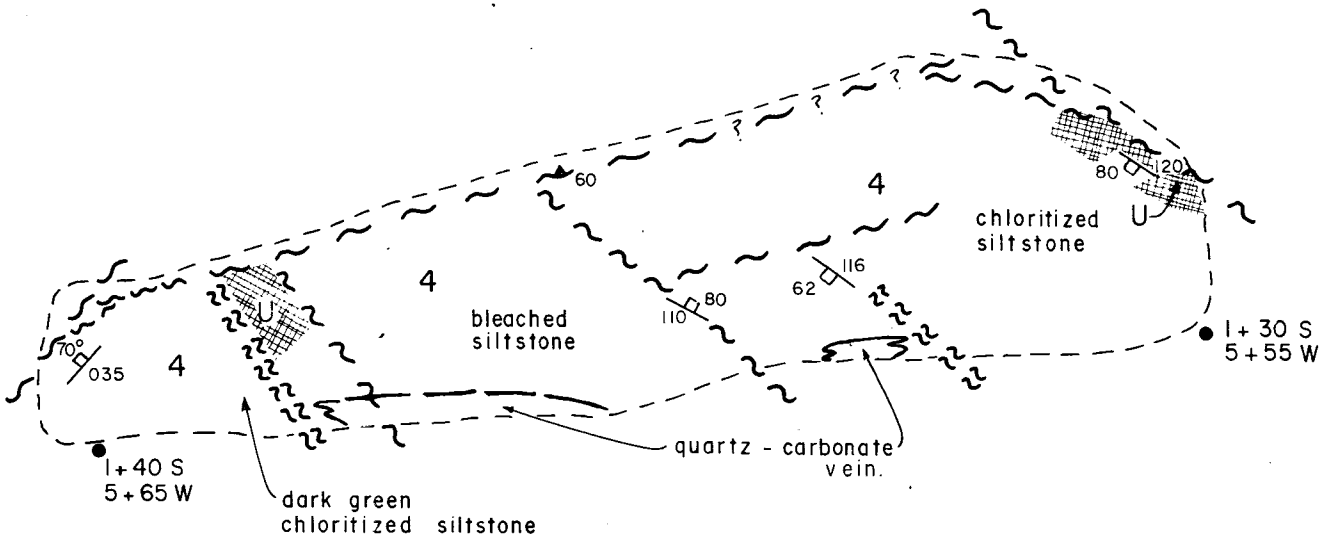
Initial prospecting and geologic mapping led to the discovery of brannerite mineralization in both float and outcrop in the central portion of the grid. Subsequent hand excavation by prospectors uncovered a small area of significant yellow, secondary uranium mineralization. Major trenching followed.

During the 1978 program a 16 x 2.5 meter trench was excavated to an average depth of 1.4 meters using both explosives and hand tools on the LOON No. 2 grid. Figure 17 shows the position of the trench with respect to the grid.

The trench (see Fig. 20) is underlain by argillaceous siltstones (Unit 4), which are strongly chloritized in the west and east portions of the trench. In the central section of the trench the siltstones are bleached and massive. A breccia body outcrops just to the south of the trench.

Northwest trending slip surfaces with minor movement separate the trench into these three lithological areas previously described. A prominent single fault feature runs along the backwall of the trench. Several other minor faults trending mainly northwest cross cut the trench.

Uranium mineralization, which has been described previously in section 6.2.0, is associated with fractures and minor faults. In the extreme eastern end of the trench, brannerite mineralization is found in the strongly chloritized siltstone. Yellow weathering, secondary uranium mineralization occurs in fractures within the bleached siltstone in the west central area of the grid. A 1m x 1m random chip sample assayed 0.248 U_3O_8.



SYMBOLS

- Trench boundary
- Geologic contact
- Fault, fault attitude (60)
- Shear
- Major joint
- Grid location
- Uranium mineralization (U)

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS
GRID No. 2

TRENCH 1

PAMICON DEVELOPMENTS LTD.

SCALE 1:1000

DRAWN	PROJECT	DATE	FIG.
		1978	20 35

6.3 DEER GRID

During the months of July - September, 1978 a picket grid was located to cover areas of interesting mineralization on the DEER claims. The exact location of the 0 + 00 point was surveyed from the main property baseline. From 0 + 00 station, a baseline at 355^{o} was located from 4 + 00 S to 1 + 20 N and 20 M stations established. Crosslines were then located at 40 M intervals from 1 + 20 N to 1 + 60 S. The crosslines were run from 0 + 40 W to 4 + 20 E and 20 M picket stations were established. Lines 0 + 00 to 1 + 20 S were extended to 1 + 20 W and fill-in lines at 20 M intervals were run between L 0 + 80 S and 0 + 80 N. Ten meter fill-in stations on lines 0 + 40 N to 0 + 40 S from 0 + 20 W to 1 + 00 E were also located.

The main DEER grid covers an area 540 meters x 280 meters and contains 6.44 km. of line with 20 M picket stations.

During September, a tie line from 1 + 60 S 2 + 00 E was extended to 6 + 00 E. From the 2 + 00 E tieline, lines 4 + 00 S to 6 + 00 S were run at 20 M intervals from 1 + 20 E to 2 + 80 E and lines 4 + 00 S to 2 + 80 S were run at 40 M intervals. Line 4 + 00 S was then connected to the main baseline 0.

The south DEER grid extension covers an area 320 M x 160 M and contains 2.8 km. of picket lines with 20 M stations.

Geochemical soil sampling, magnetometer, spectrometer, altimeter and Alpha Nuclear radon gas

surveys were conducted over the grid areas. An altimeter survey is presented on Fig. 21.

6.3.0 GEOLOGY

Since only a few outcrops are present within the entire DEER grid, the surface mapping relied mainly upon the distribution and interpretation of float material.

The information supplied by six diamond drill holes and several surface trenches proved invaluable in the definition of a lithological classification for the DEER area. However, the system remains too complex for representation on a plan map and only the major subdivisions have been outlined. See Fig. 22.

The lithological classification, derived from drill hole data, recognized four principal groups. These have been referred to as:

1) Upper Non-Metamorphic siltstones
2) Lower Non-Metamorphic siltstones
3) Upper Metamorphic siltstones
4) Lower Metamorphic siltstones

The surface mapping combines the Upper and Lower non-metamorphics and also includes a schist in the Lower Metamorphic sequence which has not been recognized in the drill holes.

The general distribution of sediments and metasediments within the grid area suggests a rather uniform sequence striking NW - SE with shallow-to-moderate southwest dips.

The division of older Lower Metamorphic

siltstone/schist rocks are exposed mainly in the east and south portions of the grid. They, in turn, appear conformably overlain by the Upper Metamorphic and Non-Metamorphic groups. Slight bedding attitude changes within the Non-Metamorphic siltstones plus linear surface expressions indicate a possible fault contact between the Upper Metamorphic and Non-Metamorphic groups.

A more complete description of the individual lithologies is given below. However, it is important to note that such an intricate classification scheme has been derived only from subtle changes seen in drill core. Main unit numbers such as Units 1, 2, 3, 4, ...10 represent easily recognized lithologies, while Units such as 1A, 3A, 8A, ...9D represent discrete changes in main units due to differences in banding, bleaching and silicification characteristics.

1) Upper Non-Metamorphic Group (UNM) - includes Units 1-3.

Unit 1 consists of a bleached, banded siltstone which weathers a light green-grey. The siltstone exhibits a fine (<0.5 cm) banding due to apple-green and cream colouration. Quartz veining and vuggyness are frequent within the unit. The principal uranium mineralization exposed in trenches 2 and 5 occurs within and adjacent to Unit 1.

Unit 1A is a weakly banded siltstone which is likely a less bleached transitional phase of Unit 1.

Unit 1B has been described as a silicified, bleached, banded siltstone mainly to distinguish it from less altered Unit 1 rocks. The unit which is intensely

fractured contains stringers of quartz, hematite and chlorite.

Unit 2 is a tricolour-banded siltstone consisting of light green, medium grey and purplish-grey compositional bands ranging in thickness from less than 1 mm to about 0.30 cm.

Unit 3 is a weakly banded siltstone which contains minor disseminated hematite. This unit weathers medium greenish-grey and is weakly-to-moderately fractured.

Unit 3A has been described as an intensely fractured, "crackled" siltstone mainly to differentiate it from the less deformed Unit 3 rocks. Hematite is abundant and fills hairline fractures in addition to being finely disseminated.

2) Lower Non-Metamorphic Group (LNM) - includes Unit 4.

Unit 4 consists of banded cream and green siltstones which have occasional weak phyllitic partings. Unit 4 marks the end of the non-metamorphic siltstone series.

3) Upper Metamorphic Group (UM) - includes Units 5 - 7.

Unit 5 consists of medium green-grey weathering, variably phyllitic siltstones which represent the transition between the non-metamorphic and metamorphic siltstone groups. The variably chloritic Unit 5 exhibits a range of weak-to-good phyllitic partings. Bedding plane movement is often exemplified by the slickensided So surfaces. Metamorphic grade increases generally west to east across the grid or with depth as in the case of

drillholes.

Unit 6 is a medium-to-dark greenish-grey, chloritic, phyllitic siltstone resembling Unit 5. However, this unit consistently exhibits phyllitic partings and shows the development of platey minerals, mainly chlorite. The phyllitic siltstone often approaches a true phyllite as evidenced by the development of a strong S_1 plane and by fine "pencil line" and crenulation lineations.

Unit 7 consists of a hematite, chlorite-bearing phyllitic siltstone which closely resembles Unit 6 with the exception of the banded, medium grain porphyroblastic hematite. This green-grey phyllitic siltstone has good phyllitic partings and weak, slightly crenulated compositional banding.

4) Lower Metamorphic Group (LM) - includes Unit 8-10 and 1B Schist.

Unit 8 is a medium grey weathering hematite-chlorite-bearing schistose siltstone and marks the beginning of the lower metamorphic, schistose siltstone series. Compositional banding is weaker and the rocks are usually moderately crenulated. The development of the schistosity or S_1 plane is far enough along to act as the principal breakage plane of the rocks. Fine grain platey minerals including chlorite, sericite and minor muscovite are common along the plane of schistosity, while banded, porphyroblastic hematite occurs regularly.

Unit 8A has been described as a weakly banded, hematite-chlorite-bearing schistose siltstone to distinguish it from the compositionally well-banded

Unit 8 rocks.

Unit 9 is a non-hematitic chloritic, schistose siltstone. These green-grey schistose siltstone rocks are moderately-to-strongly fractured and often exhibit quartz-chlorite veining and gouge zones.

Unit 9A has been described as a weakly banded, chloritic schistose siltstone to differentiate it from Unit 9 rocks where compositional banding is significantly more preserved.

Unit 9B is a bleached, chloritic schistose siltstone which weathers a light green and contains abundant chlorite.

Unit 9C has been described as a siliceous, chloritic, schistose siltstone to differentiate it from Unit 9. Unit 9C has thicker, more siliceous compositional bands which are tricoloured light grey, dark grey and medium green.

Unit 9D is a tricolour banded, chloritic, schistose siltstone which has distinct light grey, dark grey and medium green compositional bands.

Unit 10 consists of intensely fractured schistose siltstones and is characterized by vuggy, pinkish, quartzo-feldspathic veins and stringers. Unit 10 rocks are chloritic, weathering a medium green-grey, and are frequently gouged, brecciated and folded.

Light-to-medium grey schist (Unit 1B - from regional map) marks the lowermost group of rocks found on the DEER grid. The quartz-chlorite-sericite ± muscovite schist varies considerably with respect to grain size and

metamorphic grade over the entire grid area. A better understanding of this unit is needed and may be accomplished by drilling or trenching.

5) Intrusive Elements

Abundant bull quartz veins (Unit 99 undifferentiated with associated chlorite and hematite are found scattered over most of the DEER grid. Veins seem to be mainly cross-cutting both the bedding and the prevailing schistosity and appear to be associated with fault linears. Vein complexes vary in width from less than 0.1 meter up to a maximum thickness of 3 meters.

A single lamprophyre dike consisting mainly of mafic constituents has been traced intermittently along surface in the extreme northeast corner of the DEER grid. The width of the dike rarely exceeds a width of 0.5 meters.

6.3.1 MAGNETOMETER SURVEY

The magnetometer survey covered the main DEER grid area and the values and contours are presented on Fig. 23.

The values obtained range from 2795 gammas to 3275 gammas. Simple contouring of the values at 50 gamma intervals shows a slight increase in magnetic intensity in the western portion of the grid area. Several linear features are represented in contoured plan. The most significant is an E-W trending low intensity trough which approximately parallels L 0 + 00 and passes through the main showing area. A second linear trending NE-SW passing in the vicinity of 1 + 40 E, L 0 + 20 S is characterized

by parallel features in the 2900 - 2950 contours. This linear feature appears also to terminate the WNW trending linear of high values in the NW portion of the grid.

6.3.2 SPECTROMETER SURVEY

A spectrometer survey was conducted over the main DEER grid area and the values in total cps. are plotted and contoured on Fig. 24. The total cps. which range from 116 to 510 cps. were contoured at 5 cps. intervals from 120 to 200 cps. and at irregular intervals to the peak value of 510 cps. The contours show an anomalous area in the west central portion of the grid which reflects the main showing mineralization. Values greater than 200 cps. indicate a roughly elliptically shaped zone trending NE - SW approximately 100 M x 30 M in size, while slightly lower values project the zone off the NW edge of the grid. The zone of higher values is flanked by areas of low values centered at 0 + 60 S, 1 + 00 W and 0 + 60 N, 1 + 40 E.

Although no linear features are obvious in the total count data, some subtle features may possibly be interpreted.

A northerly trending linear is suspected through L 0 + 00, 0 + 90 E where the low to high transition occurs. Also, an E-W linear is possible between Lines 0 + 00 and 0 + 20 N in the west portion of the grid where steep contour gradients and flexures occur. A N-S linear feature is suspected in the extreme western grid along a trough of low values, however, limited data

prevents further interpretation.

The uranium/thorium ratios were calculated and plotted on Fig. 25. The values of the ratios which range from .17 to 3.38 were contoured at .05 intervals from .3 to .6. The contoured plan shows a roughly circular area of high values >.5 U/Th. coincident with the total cps. anomaly and the mineralized zone. Scattered values >.5 U/Th. also occur in the central and eastern grid areas.

The northerly linear through 0 + 00, 0 + 9 E suggested in the total cps. data is well-pronounced in the U/Th. contours.

The E-W linear feature between L 0 + 00 and 0 + 20 N on the north side of the main anomaly is also better defined in the ratio data.

6.3.3 ALPHA NUCLEAR RADON GAS SURVEY

The counts per hour alpha nuclear readings and their normalized values are plotted on Fig. 26 as well as the normalized values contours. The counts per hour data in the northern grid area shows an east-west trending zone of higher readings, Fig. 27. The zone covers the main showing area at L 0 + 00, 0 + 30 E and continues to L 0 + 20 S, 3 + 60 E where it changes direction to the southeast and extends off the surveyed area. Peak values within the zone reach 350 cph. A second area of higher values lies in the extreme northeast portion of the grid. It also appears to have an east-west to southeast-northwest trend, but limitations on the survey area prevent any

further comment.

The values obtained from the south grid extension are considerably higher than those from the main grid. The contours outline large areas of plus 200 cph. with peak values often greater than 500 cph.

The normalized radon gas readings range from .04 to 2.98 within the main grid area. Contouring of the values at .1 intervals from .4 and up shows a remarkable east-west linear feature with moderately steep gradients on the north or upslope side and more irregular contours on the south side. The anomaly (values greater than 1.0) is quite well-pronounced in the vicinity of the main showings at L 0 + 00, 0 + 30 E and L 0 + 00, 1 + 20 E to 2 + 00 E, but becomes more interrupted in the eastern portion of the grid. This change occurs near L 0 + 00, 2 + 40 E where a linear feature trending 035^{o} intersects. Easterly from this point, the main east-west trending anomaly becomes broader and more diffuse.

The strongest portion of the anomaly is in the SE portion of the grid where the anomaly becomes arcuate and trends to the SE. The total length of the E-W linear zone is 440 meters open on the eastern boundary.

Although many more trends may be postulated from the contoured data, three additional significant features have been interpreted. The first is an arcuate-shaped feature of low values trending N-S through L 0 + 00, 0 + 60 S. The second feature is a discontinuous trend of lower values trending NE-SW in the central portion of

the grid area while the third feature is a linear NW-SE trend passing through L 0 + 00, 2 + 20 E.

In the south grid area the normalized values range from .11 to 8.39 with an erratic value of 32.13. The contours generally show the higher values in a broad southwest-northeast zone through the central portion of the grid extension.

The contoured data for both the actual readings in counts per hour and the normalized values show a good coincidence of high values in an east-west direction through the central portion of the main grid area. The anomalous zone in the northeast portion of the grid is also reflected in both methods of data treatment.

6.3.4 GEOCHEMISTRY

Geochemical soil samples were collected from grid stations in the northwest and central grid area and subsequently analyzed for uranium. The values which are plotted and contoured on Fig. 28, ranged from 20.5 ppm to 38 ppm uranium with one erratic value 400 ppm uranium. The contoured data shows a marked increase in value intensity from east to west with the notable increase lying west of a NNE line through L 0 + 00, 0 + 90E.

The main showing centered near L 0 + 00, 0 + 30 E, is reflected as a roughly oval-shaped anomaly some 70 M x 40 M in size. Relatively high values to the SW and north of the main anomaly are considered to be the effect of downslope migration.

6.3.5 DISCUSSION

Four surveys, magnetometer, spectrometer, radon gas and geochemistry, all show coincidence of anomalous features in the vicinity of the main showing.

A compilation map, Fig. 29, has been prepared to show the significant features interpreted from the various surveys. The dots and small dashes represent the areas of higher values obtained from the spectrometer and alpha nuclear surveys while the dashed lines indicate linear features apparent in contoured data.

Both the radon gas survey and magnetometer surveys show remarkable coincidence of a linear east-west feature. The slightly arcuate-shaped feature lies on the south slope of DEERMOUNTAIN and extends from the main showings to the topographic saddle at the east end of the grid. Along its western expression, the linear zone is also coincident with anomalous features in the total count spectrometer data.

The main showings near L 0 + 00; 0 + 30 E lie on the western end of the zone which adequately reflects the mineralization in that area. Continuing east from the trenched areas, the intensity of spectrometer readings decreases and no trends are obvious. However, the alpha nuclear and magnetic data show a continuation. It is suspected that the fracture zone controlling the mineralization may be plunging beneath overlying rock units and overburden, thus masking any geochemical or spectrometer expression but still allowing

the passage of radon gas. The east-west zone crosses the trend of underlying geology and no surface expression of faulting is obvious except in trench 5.

The radon anomaly becomes far more complex in the eastern grid area where the general grade of metamorphism increases. Many of the higher readings coincide with a topographic depression trending southwest from the saddle and it is expected that downslope migration of radon gas in waters has caused much of the anomaly in the east and south grid areas. A portion of the drainage system is shown on the Geology plan, Fig. 22.

The remaining linear features shown on the compilation plan also cross the general trend of the geology and are likely related to faulting.

The coincident magnetometer-alpha nuclear linear near L 0 + 20 S; 1 + 60 E appears to be related to a system of northeast-southwest trending faults mapped in the north central grid area. The alpha-nuclear linear near L 0 + 00; 2 + 40 E also appears associated with the same set.

A northerly trending spectrometer feature at L 0 + 00; 0 + 90 E is not obvious on surface, although it may be related to a northwesterly trending fault in the same vicinity.

Due to the incomplete state of data collection from the south grid area, no interpretation map has been prepared. It is worth to note, however, that the intensity of alpha nuclear readings are much higher than the main grid. At this time, it is difficult to

determine whether the significant changes are due to climatic conditions or abrupt changes in the underlying geology. Treating the data separately, it is felt that the higher radon values are anomalous, but partially related to the topographic depression draining the eastern main grid. Many of the anomalous values, however, do occur on well-drained slopes and are subject to further investigation.

6.3.6 TRENCHING AND MINERALIZATION

The 1978 trenching program carried on where the 1977 program left off; tracing the mineralized quartz-feldspar veins and deformed chloritic siltstones exposed in the open cut between Trenches 2 and 5. The Plane Table Survey Map, Fig. 30, gives trench locations. The size and density of the pods of high grade secondary uranium mineralization increased as greater depths below surface were reached.

A number of flat lying quartz-feldspar veins appeared to localize some of the better pods within the siltstones and efforts to uncover as much of the vein system as possible exposed a strong easterly trending shear running through the end of Trench 5. The shear consisted of blocks of deformed siltstones and near vertical lenses of quartz-feldspar veining included in a fine-grained grey clay gouge. The flat lying vein system steepened approaching the shear from the south and eventually turned into the vertical lenses in the zone itself. Readings of over 10,000 counts per second (BGS-1SL) were obtained all

along the shear to where it disappeared under the north-west wall of Trench 5.

Continued work in Trench 2, west of the open cut, traced the mineralized vein in that area for several more feet downhill and to the west where it neared surface and presumably became leached out.

The mineralized vertical shear in Trench 5 was presumed to be part of a major controlling structure for mineralization in the trench area and was selected as a primary drill target.

6.3.7 DRILLING AND ASSAYING

The DEER diamond drill program commenced on August 13, 1978, and was terminated on October 4, 1978. Six holes were drilled, DDH D-78-1 through DDH D-78-6, for a total of 1,787 feet (544.7 meters). Transcripts of the detailed drill logs are presented in Appendix I of this report. Locations of the drill holes are shown on Figure 30 (DEER Plane Table Survey) at a scale of 1 inch to 30 feet. Drill hole cross-sections have been constructed at a scale of 1 inch to 30 feet and are presented in Figures 31 to 35, and the section locations are shown on the Plane Table Survey plan, Figure 30.

Far fewer difficulties were encountered during the drilling of these holes compared to the LOON program due to the use of HQ rather than NQ equipment. Work was terminated due to bad weather.

The program was considered to be exploratory in nature, and was initiated to test uranium mineralized

quartz/feldspar veins and chloritic siltstones exposed in trenches on the DEER No. 1 grid.

DDH D-78-1

High grade uranium mineralization was exposed in an open-cut between Trench 2 and Trench 5 in irregularly oriented quartz/feldspar veins and sheared, folded chloritic siltstones. It was noted during mapping that a uranium minerlaized, near vertical shear striking approximately east-west appeared to cut off and/or "feed" the mineralized zone. DDH D-78-1 was collared just to the south of this area and directed to the north-northeast at a minus 52 degree dip in an attempt to intersect the shear not far below surface.

The hole was collared in a mixture of overburden and dump material from trenching and encountered Upper Non-metamorphic siltstones at 13 feet. The rock type changed to Lower Non-metamorphic siltstones at 62 feet; to Upper Metamorphic phyllitic siltstones at 84 feet; to Lower Metamorphic schistose siltstones at 203 feet and continued in the Lower Metamorphic rocks until the end of the hole at 219 feet. A radiometric probe of the hole indicated anomalies of 87 counts per second at 97 feet and 56 counts per second at 100 feet. Radioactive alteration was noted in the core at 100.8 feet.

The following data summarizes the pertinent drilling information:

TABLE 6.3.7 - I

DDH D-78-1	STATISTICS
azimuth	020°
dip	-52°
collar elevation	4,040 ft. (1,231.4m) A.S.L.
collar location	0 + 26 S 0 + 24 E
depth	219 ft. (66.8 m)
casing	28 ft. (8.5 m)
started	August 13, 1978
completed	August 21, 1978
radiometric log	August 18 and 21, 1978
core size	HQ
core recovery	67%

DDH D-78-2

This hole was drilled from the same collar as D-78-1 in an attempt to intersect the radioactive zone at a lower elevation. Accordingly, the same azimuth was used and the dip was steepened to minus 65 degrees.

The rock types encountered were: Upper Non-metamorphic siltstones at 9 feet, Lower Non-metamorphic siltstones at 87.5 feet, Upper Metamorphic phyllitic siltstones at 98.5 feet, and Lower Metamorphic schistose siltstones at 190 feet. The radiometric probe revealed an anomaly of 81 counts per second at 123 feet. No radioactive minerals were seen in the core.

The following data summarizes the pertinent drilling information:

TABLE 6.3.7 - II

DDH D-78-2	STATISTICS
azimuth	020°
dip	-65°
collar elevation	4,040 ft. (1,231.4 m) A.S.L.
collar location	0 + 26 S 0 + 24 E
depth	256 ft. (78.0 m)
casing	51 ft. (15.5 m)
started	August 21, 1978
completed	August 26, 1978
radiometric log	August 23 and 26, 1978
core size	HQ
core recovery	63%

DDH D-78-3

This hole was drilled from the same collar as D-78-1 and D-78-2, but was directed twenty degrees to the east of the first two holes to try to intersect the radioactive zone at a third point for an accurate attitude determination. A dip of minus 50 degrees was used.

The rock types encountered were: Upper Non-metamorphic siltstones at 11.0 feet, Lower Non-metamorphic siltstones at 73.0 feet, Upper Metamorphic phyllitic siltstones at 91.0 feet, and Lower Metamorphic schistose siltstones at 182 feet. Two small wedges of phyllitic siltstones occurred in the schistose rocks, from 276 feet to 311 feet and from 347 feet to 356 feet. The radiometric probe showed three anomalous zones: 75 counts per second at 125 feet; peaks of 100, 370 and 80 counts per second

from 280 feet to 293 feet, and 61 counts per second at 355 feet. Radioactive hematite was noted in the core at 291 feet. The upper anomaly correlated with a slightly radioactive zone of poor core recovery.

The following data summarizes the pertinent drilling information:

TABLE 6.3.7 - III

DDH D-78-3	STATISTICS
azimuth	040°
dip	-65°
collar elevation	4,040 ft. (1,231.4 m) A.S.L.
collar location	0 + 24 S 0 + 26 E
depth	408 ft. (124.4 m)
casing	34 ft. (10.4 m)
started	August 26, 1978
completed	September 3, 1978
radiometric log	September 2 and 3, 1978
core size	HQ
core recovery	73.5%

DDH D-78-4

It was felt that a satisfactory radioactive zone was outlined in the first three holes by the upper probe anomalies, and that an attempt should be made to intersect the structure at greater depth below surface. D-78-4 was collared 125 feet downhill to the south of the first three holes and directed to the north-northeast at minus 50 degrees, directly beneath the first drill set-up.

The rock types encountered were: Upper

Non-metamorphic siltstone at 7 feet, Upper Metamorphic phyllitic siltstones at 25 feet, and Lower Metamorphic schistose siltstones at 237 feet. The probe indicated six anomalies: 57 counts per second at 325 feet, 81 counts per second at 374 feet, 56 counts per second at 291 feet, 63 counts per second at 411 feet, 82 counts per second at 415 feet, and 65 counts per second at 452 feet. No radioactive minerals were seen in the core although above background readings were obtained with a hand held scintillometer from 95 feet to 110 feet.

The following data summarizes the pertinent drilling information:

TABLE 6.3.7 - IV

DDH D-78-4	STATISTICS
azimuth	020°
dip	-50°
collar elevation	3,988 ft. (1,215.5m) A.S.L.
collar location	0 + 45 S 0 + 15 E
depth	648 ft. (197.5 m)
casing	30 ft. (9.1 m)
started	September 3, 1978
completed	September 12, 1978
radiometric log	September 10 and 12, 1978
core size	HQ/NQ
core recovery	83%

DDH D-78-5

The hole was drilled using the same azimuth and collar as D-78-4, with a minus 65 degree dip. The rock types encountered were: Upper Non-metamorphic siltstones

at 5 feet and Upper Metamorphic phyllitic siltstones at 31 feet.

The drill rods became stuck in the hole at 125 feet and efforts to loosen them resulted in breaking the string off. Continued drilling difficulties, combined with the approach of bad weather, resulted in the decision to move the drill to another set-up rather than starting another hole at this site.

There were no radiometric anomalies shown by the probe, nor were any radioactive minerals seen in the core. The following data summarizes the pertinent drilling information:

TABLE 6.3.7 - V

DDH D-78-5	STATISTICS
azimuth	020°
dip	-65°
collar elevation	3,988 ft. (1,215.5 m) A.S.L.
collar location	0 + 45 S 0 + 15 E
depth	125 ft. (38.1 m)
casing	30 ft. (9.1 m)
started	September 12, 1978
completed	September 16, 1978
radiometric log	September 16, 1978
core size	HQ
core recovery	63%

DDH D-78-6

The first five holes were felt to have adequately shown that radioactive structures do exist vertically below the surface showing area. Surface

geophysical work indicated that the geologic and structural patterns in the showing area trended in an easterly direction. D-78-6 was therefore collared approximately 450 feet to the east of the previous holes and directed at a minus 65 degree dip to the north-northwest to determine the nature of the geophysically indicated structures in that area. Unfortunately, a combination of bad ground and the onset of winter forced abandonment of the hole at a depth of 133 feet.

The hole was drilled entirely in Lower Metamorphic schistose siltstones. There was no radioactive material in the core nor did the radiometric probe reveal any anomalous zones.

The following data summarizes the pertinent drilling information:

TABLE 6.3.7 - VI

DDH D-78-6	STATISTICS
azimuth	343°
dip	-65°
collar elevation	4,033 ft. (1,229.3 m) A.S.L.
collar location	0 + 30 S 1 + 60 E
depth	133 ft. (40.5 m)
casing	30 ft. (9.1 m)
started	September 17, 1978
completed	October 4, 1978
radiometric log	September 24, 1978
core size	HQ
core recovery	70%

INTERPRETATION

A large number of faults, fault zones, slickensided fractures, and gouge intersections were logged in the DEER diamond drill core. While the intensity of faulting is extreme, a large percentage of the faults can be considered to be of minor structural significance as they cause no change in lithology and little or no change in core angle. A number of the faults encountered, however, are associated with quite drastic and often characteristic core angle changes. These changes can be correlated between holes and the resulting fault traces are presented in Figure 35 (Geologic Cross Section - DEER). As the upper fault in D-78-1, D-78-2, D-78-3 outcrops in the plane table area, stratum contours were constructed on the three intersections giving a fault attitude of 043/42^{o} NW. Projected to surface, the fault trace trends from southwest to northeast across the overburden covered DEER No. 1 area to join up exactly with a surface mapped fault in the 0 + 10 N, 1 + 20 E area. It should also be noted that in D-78-4 and D-78-5, the contact between Upper Non-metamorphic siltstones and Upper Metamorphic phyllitic siltstones is a fault contact. The two lower faults in the drill cross section appear to dip moderately to the northwest.

Three types of quartz veins were seen in the core: Unit 99 bull quartz, Unit 99A quartz-chlorite, and Unit 99B quartz-chlorite-hematite. A fourth type of vein, Unit 99C quartz-hematite was mapped in surface trenches

but not encountered in the drill core. It appears from the geologic cross section that the three mineralogic vein types seen in the core can all occur within the same vein system as there are few good correlations between adjacent drill holes if the vein types are treated separately. However, grouped together, a rough quartz vein correlation is possible between D-78-1, D-78-2 and D-78-3. The vein thicknesses vary greatly from hole to hole and if the same style of veining occurs at depth as in the trenches the vein attitudes will fluctuate locally as well. In general, the vein systems dip moderately to the south or southwest.

Twelve radioactive zones have been outlined to date in the drill holes. Of these, three correlate with large vein systems: at 96 feet in D-78-1 and at 356 feet in D-78-3 in quartz-chlorite-hematite veins; and at 409 feet in D-78-4 with a quartz-chlorite vein. Two zones correlate with minor vein systems: at 291 feet in D-78-3 with quartz-chlorite-hematite veins and at 451 feet in D-78-4 with quartz-chlorite veins. Three other zones occurred at or near faults or fault zones: at 124 feet in D-78-2 in the hanging wall of a fault zone, at 286 feet in D-78-3 in a fault, and at 323 feet in D-78-4 in the hanging wall of a fault zone. The remaining four zones occur in sections of poor core recovery in either phyllitic or schistose siltstones.

It was felt at the time of drilling, that the three upper radioactive zones in D-78-1, D-78-2 and D-78-3 are intersections of the same structure. Stratum

contours constructed on that information indicate the structure strikes 074/79° S. This is almost exactly coincident with linear features outlined by the surface geophysical surveys on the DEER grid. The second radioactive zone in D-78-3, at 128 feet, is no doubt closely related to the structure and indicates that it may strike more easterly than the 074 degrees previously calculated.

The remainder of the radioactive zones are too widely spaced to be able to construct stratum contours with any degree of confidence. They do show that a large number of radioactive structures exist in the grid area and that the majority of them occur more or less vertically below the surface showings.

ASSAYING

Fourteen rock geochemistry samples were taken from core in D-78-1. A high value of 25 parts per million uranium was obtained from 99 to 101 feet; the remainder of the values were below 4.0 parts per millions. Six sludge samples were collected from the water return during drilling of D-78-1. Two high values were obtained: 110 parts per million uranium from 50 to 55 feet, and 12 parts per million uranium from 100 to 105 feet; the remainder of the values were below 6.5 parts per million.

Nine rock geochemistry samples were taken from D-78-2, all of which analyzed less than 3 parts per million uranium. The six sludge samples also returned values below 3 parts per million.

Thirty-nine rock geochemistry samples were

collected from D-78-3 along with four sludge samples; all analyzed less than 7 parts per million uranium. One assay sample taken from 290.5 to 291.0 feet assayed 0.063% U_3O_8. Mineralization consisted of microscopic brannerite grains in specular hematite.

Thirty rock geochemistry samples were taken from D-78-4 core, the highest analyzed 4.5 parts per million uranium. Six rock geochemistry samples were taken from D-78-5; all analyzed below 1.5 parts per million uranium. Of the seven rock geochemistry samples and four sludge samples collected from D-78-6, all analyzed below 2 parts per million uranium.

6.4 FROG GRID

During August, a reconnaissance grid was located to cover an area of interesting uranium mineralization discovered in 1977. These occurrences were originally called the DEER No.3 showings but are now referred to as the FROG showings.

The Frog grid baseline was established at 095° from 0+80W to 6+40E with picket stations at 20M intervals. Crosslines were then located at 80M spacing and run from 1+20N to 3+80S. All lines are marked on 20M stations. The main grid consists of 5.7 kilometers of marked grid lines. A western extension to cover a known breccia occurrence was tied on late in the season. See Figure 36 for line locations.

6.4.0 GEOLOGY

The Frog grid is underlain by rocks contained within the upper portion of the Fairchild Group stratigraphy. This portion of the stratigraphy has been determined as the most favourable for the occurrence of uranium mineralization.

The rock exposure is good along the upper ridge in the northeast corner of the Frog grid but along the low flat ridge in the showing area, the exposure is poor and outcrop is generally confined to creek embankments.

The main rock unit on the Frog grid is a fine-grained light to dark green generally thinbedded siltstone (See Figure 36). In the eastern portion of the grid a pale green quartz, chlorite, sericite phyllite apparently overlies the siltstone but the contact between the two units is obscured by overburden and the

true relationship between the two units cannot be determined. Since the strike attitudes of the two units are different it is possible that the phyllite has overthrust the siltstone.

Diorites and lesser breccia bodies have intruded the sediments primarily within the western portion of the Frog grid. Fault orientations generally trend east-west and the largest fault crosses the grid in the proximity of the showing area.

Alterations within the siltstone unit consists primarily of bleaching by intense silicification. The same process which caused the silicification of the siltstone was probably responsible for the emplacement of coarse grained quartzo-feldspathic veining.

Mineralization present on the Frog grid primarily exists in two forms within the siltstone host unit but because of the overburden conditions a full evaluation has not yet been made. The best mineralization appears to be as coarse grained brannerite crystals within the quartz-feldspar veining. The second form of uranium emplacement exists as low grade very fine-grained brannerite which has crystalized on fracture surfaces in the area of the intensly silicified siltstone. It should also be mentioned that trace uranium was detected within one of the breccia exposures.

6.4.1 TRENCHING

Trenching was carried out in the 0+00N, 1+80E area to investigate an area in which a large amount of uranium bearing material was found in overburden (See Figure 36). The trench was excavated and blasted to a size of 120 meters by 3 meters by 2 meters deep but failed to encounter consolidated

overburden. Brannerite laths occur in metasomatized siltstones associated with quartz and feldspar veining in the vicinity of the southeasterly trending fault crossing the trench. However, the source of this material was not found. More trenching as well as more detailed geophysical surveys will be required to evaluate the area.

No assay samples were taken since the only mineralized material was not in place.

6.4.2 MAGNETOMETER SURVEY

The magnetometer survey covered the main grid area between lines 0+80W and 6+40E and the values and contours are presented on Figure 37.

The values obtained range between 2295 gammas and 3902 gammas. Simple contouring of the values at 50 gamma intervals from 3,000 to 3,400 gammas shows a marked increase in magnetic intensity in the northwest portion of the grid. The contours indicate a northeast-southwest trending area of higher values crossing the baseline at approximately 0+80E. Peak values within the zone are 3,902, 3,850 and 3,525 and 3,447 gammas. A second area of higher values, also having a northeast trend lies in the northeastern portion of the grid and passes through L 4+80E, 0+60N.

6.4.3 SPECTROMETER SURVEY

The spectrometer survey was done over the same portion of the grid as the magnetometer survey and the values and contours are presented in Figure 38.

The values range from 45 counts per second to 214 counts per second. Values were contoured at 5 counts per

second intervals from 120 cps to 175 cps and several high trends were noted. An area of greater than 150 cps trends at 065° across the southeast corner of the grid from 4+00S, 2+40E to 1+60S, 6+40E. Peak value in the zone is 175 cps. Two linear trends intersect at 0+40N, 0E baseline in the northwest corner of the grid. The zones trend 080° and 105° respectively and have a peak value of 166 cps at the intersection. A large area covering the southwest quadrant of the grid shows values of less than 120 cps ranging to the low of 45 cps.

6.4.4 GEOCHEMISTRY

Geochemical soil samples were collected from the main grid area at 40M intervals on all lines. The samples were analysed for uranium in p.p.m. and the results are plotted on Figure 39. The values are generally low and range from 0.5 ppm to 40 ppm. Since few values report higher than 1.0 ppm, no contouring of the data was attempted.

A visual examination of the values shows L 0+80E, 0+40N to 1+20N and L 3+20E, 2+40S to 3+20S to be of some interest. The peak values are 40 ppm uranium and 5.5 ppm uranium respectively.

6.4.5 CORRELATION AND DISCUSSION

The results of the magnetometer, spectrometer, and geochmical surveys on the FROG grid are inconclusive at this time. However some basic points may be noted:

1) The diorite intrusive body mapped in the southwest corner of the grid is reflected by a magnetic high and a radiometric low.

2) The magnetic high in the northwest corner of the grid is underlain by siltstone which is usually magnetically low over most of the grid. The same area also gives high spectrometer readings.

3) The strong topographic linear feature mapped as the fault crossing the 0N baseline at 1+80E is reflected by a co-incident linear trend of high spectrometer values. In addition, a large number of the mineralized float occurrences are located on or near this linear.

4) Most of the high soil geochemistry values in the northwest portion of the grid appear to be the result of downslope migration from the known uranium occurrences. However the high values at 0+80N, 0+80W and 1+20N, 0+80E occur on the north side of the creek in that area and are therefore suspected to be derived from some as yet undiscovered uranium source.

7.0 ADDITIONAL LOON-POOL AREAS OF INTEREST

7.1 GEOCHEMICAL ANOMALIES

7.1.1 INTRODUCTION

A total of 199 water samples, 74 silt samples and 41 soil samples were taken on the LOON-POOL claims outside of the grid areas. Results are presented in Figure 40 of this report. These were designed primarily to follow up previously indicated areas of interest, however, a continuing program of reconnaissance stream sampling was carried out in newly prospected areas. Samples were classified as background, first order anomalous, and second order anomalous on the basis of the classification established during the 1977 joint venture program.

TABLE 7.1.1

CLASSIFICATION OF GEOCHEMICAL SAMPLES

	SOILS	SILTS	WATERS
background	< 0.8 ppm	< 5 ppm	< 1.3 ppb
1st order anomalous	0.8-3.3 ppm	5-35 ppm	1.3-9.0 ppb
2nd order anomalous	> 3.3 ppm	> 35 ppm	> 9.0 ppb

Three areas of interest were outlined.

7.1.2 SOUTH DEER AREA

Areas of high radioactivity were noticed in the vicinity of springs originating in a noticeable escarpment running along the southern base of the central ridge of the DEER and FROG claims. A silt and

water sample traverse along the escarpment outlined several anomalous seepages in the area of the DEER south grid extension. Silt sample values of 125, 340, and greater than 400 parts per million uranium were obtained in three different seepages over a distance of 550 meters. First order anomalous values were obtained in water samples of seepages and springs in the same area.

7.1.3 WEST DEER AREA

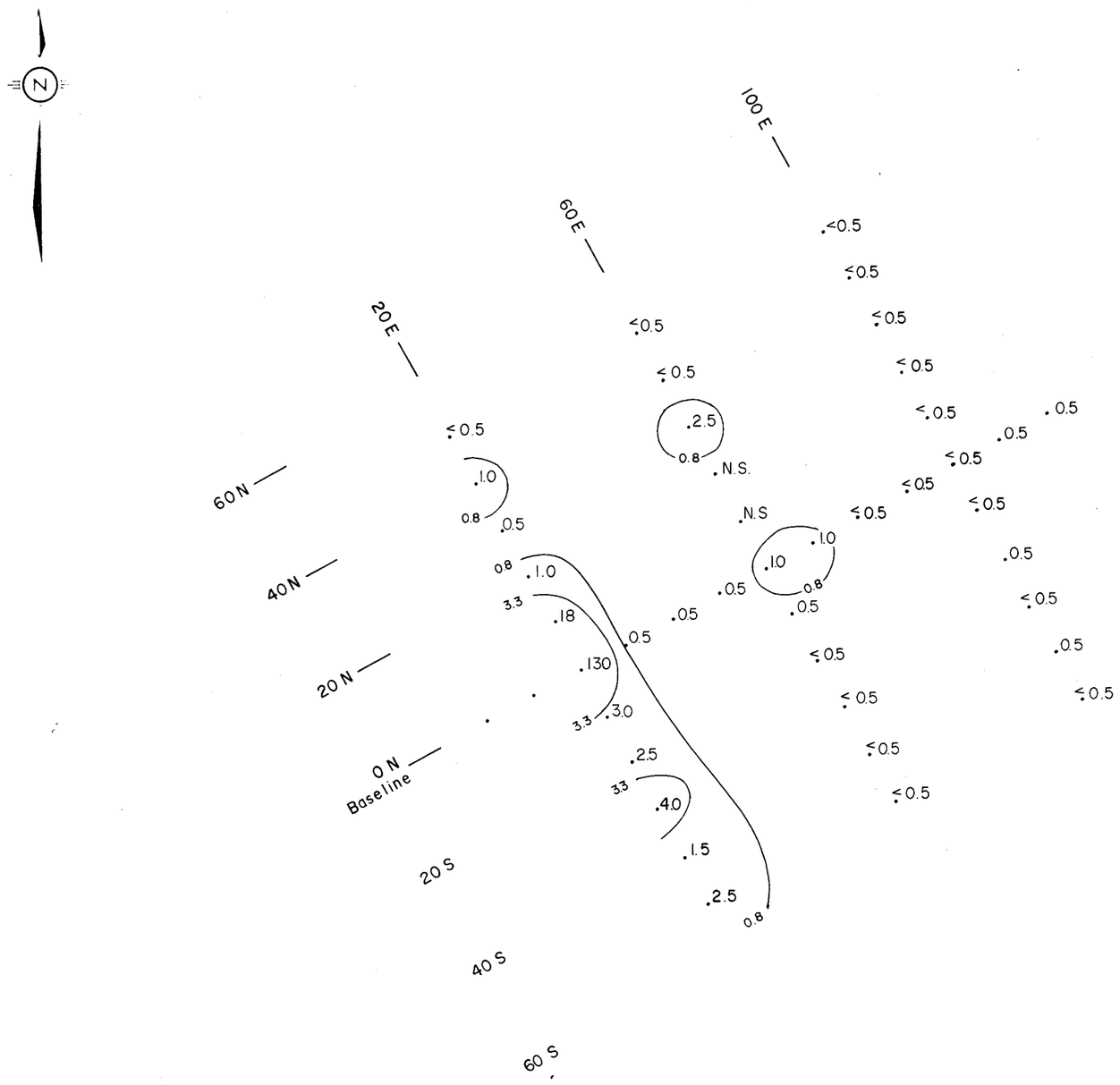
Water and silt sample traverses were run in DEER CREEK from the headwaters to the mouth as well as in all the drainages flowing into the creek from the west. Silt sample values of 92 and 165 parts per million were returned from the headwaters of the stream flowing southeasterly into DEER CREEK approximately 1.5 kilometers west of the DEER No. 1 area. Water sample values of 8.5 and 9.4 parts per billion uranium were obtained at the same locations. In addition, silt samples containing 90 and 220 parts per million uranium were taken from DEER CREEK and a small tributory just downstream from where the above-mentioned stream enters DEER CREEK. Only one of the fifteen geochemical samples taken in this area contained below background levels of uranium. This represents a markedly higher geochemical response than for the main branch of DEER CREEK which drains the area of the main DEER showings. Detailed prospecting in the area failed to discover surface showings and radiometric surveys should be

contemplated.

7.1.4 OWL AREA

A detailed silt and water sample traverse was conducted along the length of OWL CREEK and its tributaries in an attempt to duplicate anomalous results reported by the Geological Survey of Canada in the fall of 1976. Two second order anomalous silt samples were taken containing 35 and 42 parts per million uranium. The highest of the two was taken from a small stream entering OWL CREEK from the northeast approximately 700 meters upstream from its mouth, and effectively confirms the G.S.C. results. The other sample was taken from a stream entering from the north approximately 1.9 kilometers upstream from the mouth of OWL CREEK. Most of the samples taken between these two sites were first order anomalous in uranium.

A small soil sample grid was established in the area of the downstream anomaly and two anomalous soil areas were outlined (see Fig. 41 this report). The largest area lay along the line closest to OWL CREEK (0 + 20 E) from which two samples contained second order anomalous values of 4 and 130 parts per million uranium. Seven other samples on the same line returned first order anomalous values. In addition, three samples in the area of Baseline, 0 + 60 E returned first order anomalous values. The 0 + 20 E anomaly is open in two directions and requires additional work to determine its overall size and nature.



Values in parts per million Uranium in soil.

> 3.3 ppm. anomalous

0.8 – 3.3 ppm above background

< 0.8 ppm background

MOUNTAINEER-PAN OCEAN JOINT VENTURE

OWL GRID

NTS 106-E-2

YUKON TERRITORY

URANIUM IN SOILS

PAMICON DEVELOPMENTS LTD.

SCALE 1:1000

10 0 10 20 30 50 m

DRAWN: Airair	PROJECT Fairchild	DATE NOV. 1978	FIG. 41

7.1.5 FOX CREEK AREA

Anomalous soil sample results taken in 1977 on the west bank of FOX CREEK prompted the establishment of a baseline in that area. During the surveying of the baseline it was noted that parts of the 1977 sample line ran low enough on the creek bank that some of the soil samples were actually silt samples from old creek channels. A new soil line was run further up the bank and 41 soil samples taken. All but one of the samples analyzed below background levels of uranium. The one high sample contained 2.5 parts per million uranium. These results are disappointing, however, some cross lines should probably be located in the area prior to its being written off.

7.2 TWIN LAKES

The TWIN LAKES showing area is located in an area of heavy overburden and talus in the south-eastern POOL mineral claims just to the west of "TWIN LAKES".

Uranium mineralization occurs over a wide area in float, in the contact zone between a large diatreme breccia complex and Upper Subdivision Fair-child group rocks which include interbedded carbonaceous black shales and orange-brown weathering dolomites.

Brannerite mineralization is found mainly within quartz-feldspar-dolomite pegmatite dikes which appear to be related to the larger breccia bodies. Brannerite generally forms medium grain, bleb-like

crystals, but on occasions, at the eatern showings spectacular single mega-crystals measuring 5 x 2.5 x 2 cms. were discovered.

Preliminary exploratory trenching failed to uncover sources for mineralized float. Further trenching and radiometric surveys are advised.

7.3 SOUTH LOON SHOWINGS

In May and June 1978, perimeter prospecting of the POOL-LOON block led to the discovery of a swarm of radioactive breccia bodies on the south end of LOON MOUNTAIN. The breccias intrude Fairchild ribbed weathering siltstones and dolomites and have typically brannerite mineralized quartz-feldspar flooded zones both in and adjacent to the bodies themselves. Several of the better grade areas read over 3,000 cps. (BGS-ISL) over distances of 3 to 7 meters. The LOON 233 to LOON 284 mineral claims were added on to the south of the original LOON block to cover the new showings. Geologic mapping and sampling will be required to evaluate the occurrences.

GENERAL DISCUSSION AND CONCLUSIONS

During the 1978 field program the 1:10,000 scale mapping program accomplished preliminary mapping over almost the entire LOON-POOL area. Exposure on the LOON was found to be excellent (up to 60% above the 4000 foot level), while exposure on the POOL was generally poor (less than 15%).

Local mapping shows that almost the entire claims are underlain by Fairchild Group rocks. Further observations confirm that both the LOON and DEER mineralization occur within the 'host' siltstone unit at approximately the same stratigraphic level near the top of the Middle Subdivision Fairchild Group. It may also be noted that the mineralization is not directly, but only spatially, related to breccia bodies. Tectonic features such as faulting and fracturing appear to be the main controls for mineralization.

A study of both regional and local stratigraphy, combined with water sampling results, indicates that many of the showings in the BONNET PLUME area lie within the upper portion of the Fairchild group. More specifically, they appear to be confined to a siltstone unit which lies near, or at the top of, the Fairchild Middle Subdivision just below the lowermost dolomites of the Upper Subdivision.

The various geophysical and geochemical techniques used on the grid programs within the LOON-POOL block appear to have varying degrees of usefulness or reliability. Most problems were encountered on the LOON

No. 1 and 2 grids where extreme topography made ground conditions unsuitable for geochemical sampling and the use of alphameters. However, all surveys work well and appear to return reliable results. This opinion is based upon coincidence of the various survey expressions over areas of known mineralization.

The Alpha Nuclear Survey results on the DEER grid present the most useful data for any attempt at interpreting extensions from the main showing area. It was found that they could be correlated to subtle features revealed in the other surveys, in particular the magnetics in the north grid area. The most significant feature noted is an east-west linear passing through the main showing area.

Since it is now felt that the majority of the mineralization in the DEER area is structurally or fault controlled, such linear expressions in the data are of prime interest. However, given the unglaciated nature of the terrain, one could expect deep weathering and leaching along such major structures. In the case of the east-west linear mentioned above, such deep leaching could explain the existence of a magnetic low and the absence of a spectrometer response in an area of anomalous amounts of radon gas.

Trenching during the program continued to expose encouraging mineralization in the LOON 1, LOON 2 and DEER showing areas.

The high grade DEER showing mineralization appears to be related to an easterly trending, near

vertical shear or fault system.

A secondary set of joint planes appears to be one control for the uranium encountered on the LOON 1.

Mineralization in the LOON 2 trench is encouraging, but appears breccia-related and of low priority at this time.

Diamond drilling within the LOON 1 and DEER grid areas has been unsuccessful in locating economic uranium mineralization to date. However, many radioactive intersections, as indicated by downhole radiometric probing, have been made. Interpretation of the DEER intersections are discussed in the text, but of major interest is an approximate east-west trending structure which appears to coincide with surface data.

Drilling results from the LOON area are still rather inconclusive.

Several interesting areas discovered through property prospecting and water sampling require future work.

Results from the initial grid work on the FROG group are inconclusive. However, deep leaching as evidenced by highly decomposed quartzo-feldspathic vein material in the trench areas requires further attention. A radon gas survey would be useful for a better understanding of the present data.

Geochemical water results in an area lying about 1500 M west of the DEER grid, outline an area of strong response. Prospecting locally has failed to produce any mineralization. Due to limited exposure, the

area should be tested by close spaced geochemical soil and geophysical techniques.

Anomalous silt, water and soil sample results have reconfirmed the original geochemical anomaly on the OWL claims, but prospecting has failed to reveal any mineralization. Further detailed work is necessary to evaluate the area.

High grade breccia associated brannerite mineralization in the TWIN LAKES PASS area appears significant and more work is required in that area.

Geochemical results in the FOX CREEK area could not be duplicated during resampling. It is suspected that the original samples were taken too low on the hill side and reflect anomalous creek silts derived from the FROG showings higher upstream.

9.0 RECOMMENDATIONS

The results of the 1978 program are encouraging and a similar program of continued property assessment should be conducted on the LOON-POOL block during 1979.

The program should include a combination of ground geochemistry and geophysics with both caterpillar trenching and diamond drilling to test results. It is felt that 10,000 feet of diamond drilling will be adequate to explore many of the structures postulated to date. A D7-E ripper equipped Caterpiller should be employed on a full time basis both to assist in drill moves and to conduct a trenching program. Early emphasis should be placed on further delineation of the DEER grid anomalies. The DEER grid should be expanded to include the anomalies detected on the South grid extension. The expansion should include the completion of all lines from 1 + 20 W to 4 + 40 E as well as south lines from 6 + 00 S to 8 + 00 S. Magnetometer, spectrometer, alpha nuclear and geochemical surveys should be conducted on all extensions. The day-to-day results will dictate any further extension to the grid required. Since the mineralization appears fault related, self potential should also be considered as another geophysical tool.

Diamond drilling of an exploratory nature should continue to test the east-west linear in the central grid while other surveys can be completed. Cat trenching could commence early in the south grid

area. It is expected that one month to six weeks would be required before the extension data will reach the interpretation stage.

Concurrently, with development on the DEER grid, the west DEER geochemical anomalies should be tested by grid pattern sampling. For control, the DEER grid L 0 + 00 should be extended to approximately 1500 M west where a new north-south baseline can be run northward to cover the anomalous area. A 500 M by 300 M grid with 40 M lines and 20 M stations should be adequate to test the area using geochemical and geophysical methods.

Results to date have been inconclusive on the LOON block. Since the program is at a more advanced stage on the DEER, it is recommended that the LOON grid area be considered as a secondary target pending results of the DEER program. Immediate work should consist of fill-in lines on the main grid and completion of survey work. Bulldozer access to the grid area is impossible, therefore hand trenching will be necessary to test further targets.

The geochemical anomalies on the OWL claims, reconfirmed during 1978, require additional work. The present reconnaissance grid should be expanded to the southwest and sampled in order to close off the indicated geochemical anomaly. Spectrometer and magnetometer surveys should be conducted over the finished grid area.

A prospecting program should be continued in the LOON-POOL area. Emphasis should be placed on

detail in areas of known mineralization such as the TWIN LAKES PASS showing and south LOON area.

Geological evaluations should be completed on several of the showings marked on the LOON-POOL geology map as well as further investigation of many geochemical water and silt anomalies.

Respectfully Submitted,

David A. Keagan

L. Davey

Mike Stammers

C. K. Ikona

Grant Number	Claim Name	Renewal Period
YA14443 to YA14446	Fox No. 1 to 4	5 yrs.
YA14455 to YA14458	Fox No. 13 to 16	5 yrs.
YA14467 to YA14470	Fox No. 25 to 28	5 yrs.
YA14823 to YA14842	Owl No. 1 to 20	5 yrs.
YA16536 to YA16538	Clam No. 42 to 44	4 yrs.
YA16545	Clam No. 51	4 yrs.
YA16547 to YA16548	Clam No. 53 to 54	4 yrs.
YA16769 to YA16873	Pool No. 1 to 105	5 yrs.
YA16875 to YA16894	Pool No. 107 to 126	5 yrs.
YA16899 to YA16912	Pool No. 131 to 144	5 yrs.
YA16917 to YA16930	Pool No. 149 to 162	5 yrs.
YA16937 to YA16968	Pool No. 169 to 200	5 yrs.
YA16970	Pool No. 202	5 yrs.
YA16972	Pool No. 204	5 yrs.
YA16974	Pool No. 206	5 yrs.
YA16976	Pool No. 208	5 yrs.
YA16978	Pool No. 210	5 yrs.
YA16980	Pool No. 212	5 yrs.
YA16982	Pool No. 214	5 yrs.
YA16984	Pool No. 216	5 yrs.
YA16986	Pool No. 218	5 yrs.
YA16988	Pool No. 220	5 yrs.
YA16990	Pool No. 222	5 yrs.
YA16992	Pool No. 224	5 yrs.
YA16994	Pool No. 226	5 yrs.
YA16996	Pool No. 228	5 yrs.
YA16997 to YA17004	Pool No. 229 to 234	5 yrs.
YA17013 to YA17018	Pool No. 245 to 250	5 yrs.
YA17025 to YA17028	Pool No. 257 to 260	5 yrs.
YA17035 to YA17038	Pool No. 267 to 270	5 yrs.
YA17045 to YA17048	Pool No. 277 to 280	5 yrs.
YA17055 to YA17058	Pool No. 287 to 290	5 yrs.
YA17061 to YA17069	Pool No. 293 to 301	5 yrs.
YA17071	Pool No. 303	5 yrs.
YA17073	Pool No. 305	5 yrs.
YA17075	Pool No. 307	5 yrs.
YA17077	Pool No. 309	5 yrs.
YA17079 to YA17088	Pool No. 311 to 320	5 yrs.
YA17094 to YA17103	Pool No. 326 to 335	5 yrs.

Grant Number	Claim Name	Renewal Period
YA7160 to YA7171	Loon No. 1 to 12	2 yrs.
YA14183 to YA14188	Wolf No. 1 to 6	2 yrs.
YA14189 to YA14202	Wolf No. 7 to 20	5 yrs.
YA14203 to YA14206	Wolf No. 21 to 24	2 yrs.
YA14207 to YA14222	Wolf No. 25 to 40	5 yrs.
YA14223 to YA14225	Wolf No. 41 to 43	2 yrs.
YA14226 to YA14242	Wolf No. 44 to 60	5 yrs.
YA16549 to YA16560	Loon No. 13 to 24	2 yrs
YA16561 to YA16571	Loon No 25 to 35	5 yrs
YA16572	Loon No. 36	2 yrs.
YA16573	Loon No. 37	5 yrs.
YA16574	Loon No. 38	2 yrs.
YA16575	Loon No. 39	5 yrs.
YA16576	Loon No. 40	2 yrs.
YA16577 to YA16584	Loon No. 41 to 48	5 yrs.
YA16585 to YA16606	Loon No. 49 to 70	2 yrs.
YA16607 to YA16608	Loon No. 71 to 72	5 yrs.
YA16609 to YA16662	Loon No. 73 to126	2 yrs.
YA16663 to YA16664	Loon No. 127 to 128	5 yrs.
YA16665 to YA16667	Loon No. 129 to 131	2 yrs.
YA16668 to YA16768	Loon No. 132 to 232	5 yrs.
YA30757 to YA30808	Loon No. 233 to 284	5 yrs.
YA15391-YA15426	Deer No. 1 to 36	2 yrs
YA15363-YA15376	Frog No1 1-14	2yrs
YA15377-YA15390	Frog No. 17 to 30	2 yrs.
YA15806-YA15829	Mosquito 1 to 24	2 Yrs.
YA16013-YA16052	Clam No. 1 to 40	1 yr.
YA16535-YA16548	Clam No. 41 to 54	1 yr.
YA16013-YA16052	CLam No. 1 to 40	1 yr.

155°W

134°W

133°30'W

65°15'N

65°N

64°45'N

FOX CREEK AREA (see note)

WOLF - LOON

KIWI LAKE

QUARTET LAKES

HARE

RAID BREAK

LYNX

URSUS

ELK

PIKA

ANGEL LAKE

HAWK

McCLUSKY LAKE

KNORR CREEK

RAPITAN CREEK

BONNET CREEK

WIND CREEK

ROYAL CREEK

BEAR RIVER

PLUME RIVER

DELORES CREEK

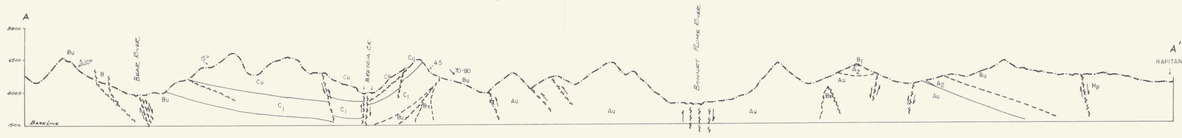
GILLESPIE CREEK

BOND CREEK

BARREL CREEK

CROSS SECTION A-A'

(LOOKING NORTH)



LEGEND

- Kd / Kdi — Diabase, Kdi - Diorite
- ORDOVICIAN DEVONIAN — D — Carbonates
- CAMBRIAN — Є — Undivided clastics and Carbonates
- PINGUICULA GROUP
- HADRYNIAN — Hp — Undivided clastics and Carbonates
- Bx — Breccia.
- GILLESPIE GROUP
- Cu — Undivided orange weathering, dolomite, grey-green weathering dolomite, stromatolitic dolomite, oolitic dolomite occasional shale.
- Ci — Interbedded orange weathering dolomite and dark siltstone, transition from Wernecke Group to Gillespie Group
- WERNECKE GROUP
- HADRYNIAN — Bu — Undivided sandstone and shale, occasional massive quartzites.
- Bz — Lightly pyritic quartzite. Minor thin shale
- Bi — Black shale, sandstone and shale interbeds
- FAIRCHILD GROUP
- Az — Interbedded brown weathering dolomite and black shale, white limestone marker bed, massively bedded rusty weathering pyritic shale,
- Au — Undivided grey weathering calcareous siltstone, interbedded siltstone and limestone, phyllite minor limestone and quartzite

SYMBOLS

- Geological contact (defined, approx. assumed)
- Thrust Fault (defined, approx.)
- Fault (defined, assumed)
- Bedding attitude defined (G- gentle M- moderate S- steep)
- Bedding overturned
- Bedding tops unknown
- Anticlinal axis (arrow indicates plunge)
- Synclinal axis (arrow indicates plunge)
- Limits of unconsolidated glacial and alluvial deposits.

MOUNTAINEER - PAN OCEAN JOINT VENTURE

PROJECT AREA
YUKON TERRITORY

REGIONAL GEOLOGY

SCALE IN KILOMETRES
3 2 1 0 1 2 3 4 5

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
ALTAIR.	QUARTET-FAIRCHILD	DEC. 1977	3


MOUNTAINEER-PAN OCEAN JOINT VENTURE
LOON-POOL CLAIM AREA
GEOLOGICAL MAP
N.T.S. 106 E 1&2
YUKON TERRITORY
SCALE IN METRES
0 100 200 300 400 500
PAMICON DEVELOPMENTS LTD.
DRAWN BY Altair
PROJECT Fairchild
DATE Nov. 1978
FIGURE No. 4

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS
GRID No.1

TOPOGRAPHIC CONTOURS

INTERVAL 10 M
N.T.S. 106 E/1
YUKON TERRITORY

SCALE IN METRES
60 45 30 15 0 30 60

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	5

LITHOLOGY

INTRUSIVE STAGE

99A Quartz-chlorite vein

SLATES & SILTSTONES

4A,B Slate With Silicified Siltstone interbeds
- 4A : ≥75% Slate, ≤25% Siltstone
- 4B : ≥50% Slate, ≤50% Siltstone

4C,D Silicified Siltstone with Slate interbeds
- 4C : ≥50% Siltstone, ≤50% Slate
- 4D : ≥75% Siltstone, ≤25% Slate

SLATE

3 Variably coloured–grey, brown, green, frequently banded

PHYLLITIC SILTSTONE

2

PHYLLITE

1 Variably coloured – green, grey; occasionally slatey

SYMBOLS

- Grid lines & survey stations
- Outcrop limits
- Trench boundaries
- Geological contact (approx., defined)
- Fault (approx., assumed)
- Bedding attitude
- Foliation attitude
- Area of abundant mineralized float
- x Mineralized float

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS

GRID 1-GEOLOGY

N.T.S. 106 E/1
YUKON TERRITORY

SCALE IN METRES
60 45 30 15 0 30 60

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	6

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS
GRID No.1

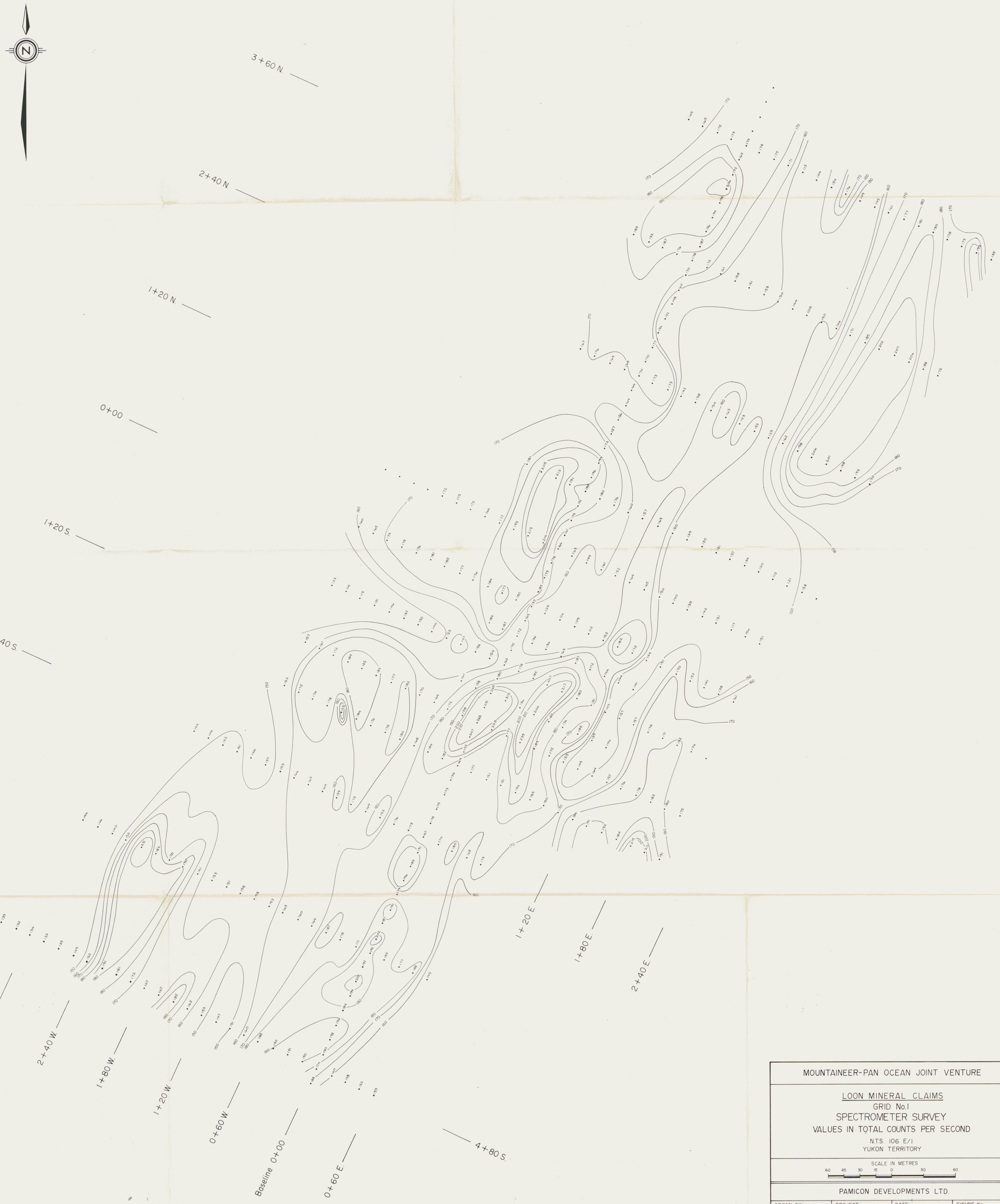
MAGNETOMETER SURVEY

CONTOUR INTERVAL 100 GAMMAS
N.T.S. 106 E/1
YUKON TERRITORY

SCALE IN METRES
60 45 30 15 0 30 60

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	7



MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS
GRID No.1
SPECTROMETER SURVEY
VALUES IN TOTAL COUNTS PER SECOND
N.T.S. 106 E/1
YUKON TERRITORY

SCALE IN METRES
60 45 30 15 0 30 60

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	8

4+80 N.
3+60 N.
2+40 N.
1+20 N.
0+00
1+20 S.
2+40 S.
3+60 S.
4+80 S.
3+60 W.
3+00 W.
2+40 W.
1+80 W.
1+20 W.
0+60 W.
Baseline 0+00
0+60 E.
1+20 E.
1+80 E.
2+40 E.

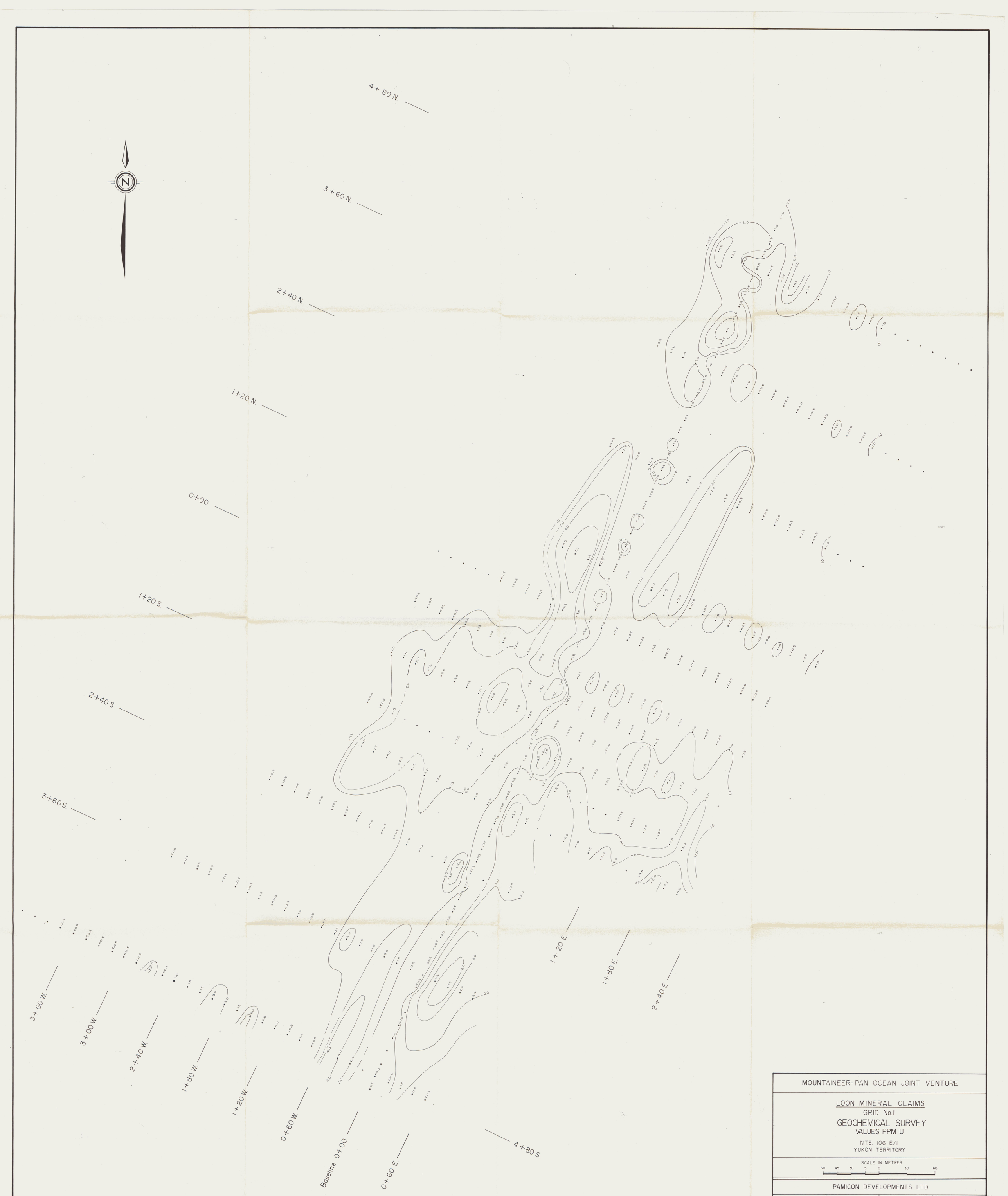
MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON MINERAL CLAIMS
GRID No.1
ALPHA NUCLEAR
RADON SURVEY VALUES C.P.H. (NORMALIZED)
CONTOUR INTERVAL OF NORMALIZED VALUES .1
N.T.S. 106 E/1
YUKON TERRITORY

SCALE IN METRES
60 45 30 15 0 30 60

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	9



MOUNTAINEER-PAN OCEAN JOINT VENTURE

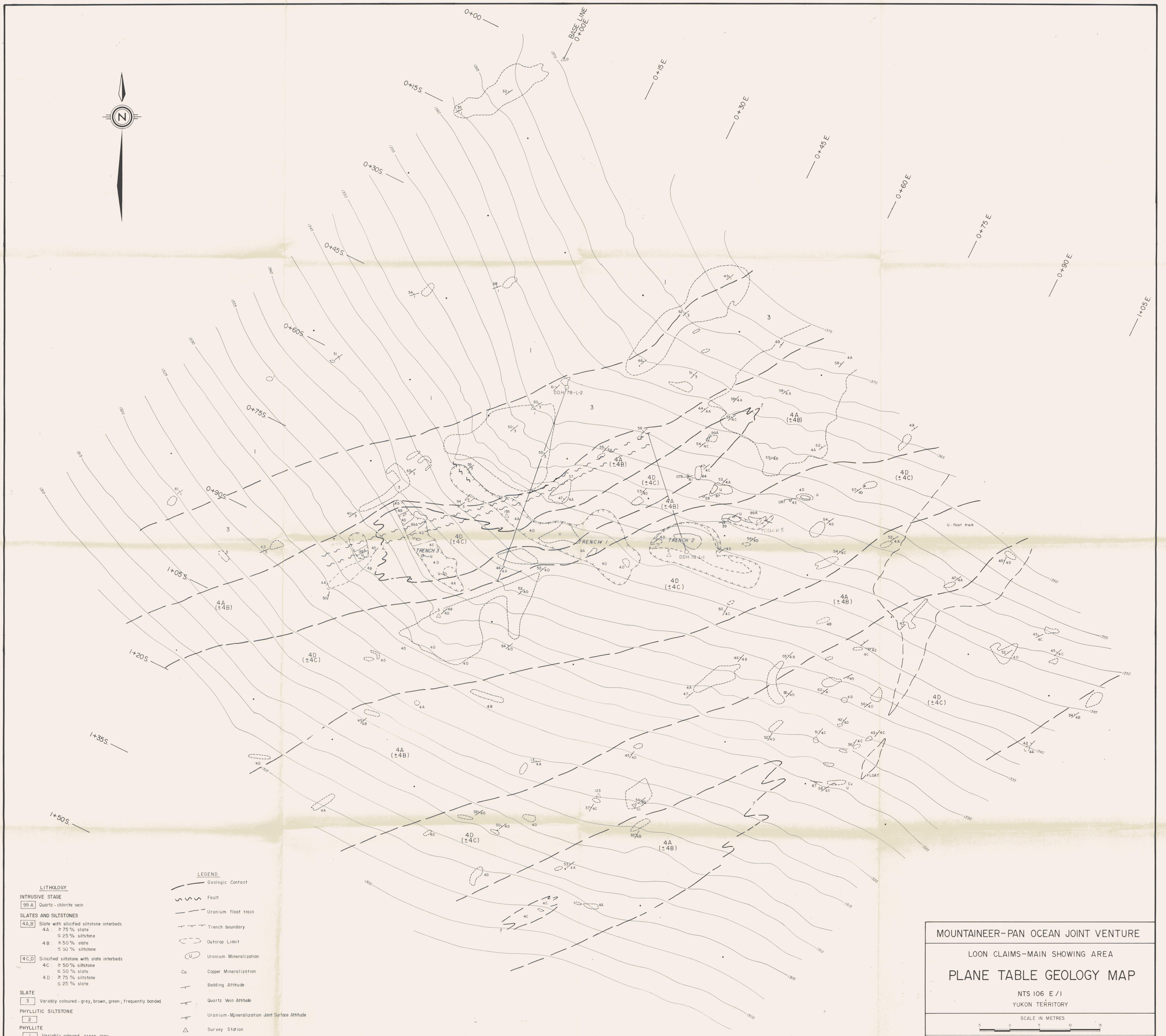
LOON MINERAL CLAIMS
GRID No.1
GEOCHEMICAL SURVEY
VALUES PPM U

N.T.S. 106 E/1
YUKON TERRITORY

SCALE IN METRES
60 45 30 15 0 30 60

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	10



LITHOLOGY

INTRUSIVE STAGE

99 A Quartz - chlorite vein

SLATES AND SILTSTONES

4A,B Slate with silicified siltstone interbeds
- 4A : ≥ 75 % slate, ≤ 25 % siltstone
- 4B : ≥ 50 % slate, ≤ 50 % siltstone

4C,D Silicified siltstone with slate interbeds
- 4C : ≥ 50 % siltstone, ≤ 50 % slate
- 4D : ≥ 75 % siltstone, ≤ 25 % slate

SLATE

3 Variably coloured - grey, brown, green ; frequently banded.

PHYLLITIC SILTSTONE

2

PHYLLITE

1 Variably coloured - green, grey, occasionally slatey.

LEGEND

- Geologic Contact
- Fault
- Uranium float train
- Trench boundary
- Outcrop Limit
- (U) Uranium Mineralization
- Cu Copper Mineralization
- Bedding Attitude
- Quartz Vein Attitude
- Uranium-Mineralization Joint Surface Attitude
- △ Survey Station
- • Grid Control Station
- 1040 Contour - Interval 2.5 metres

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON CLAIMS-MAIN SHOWING AREA

PLANE TABLE GEOLOGY MAP

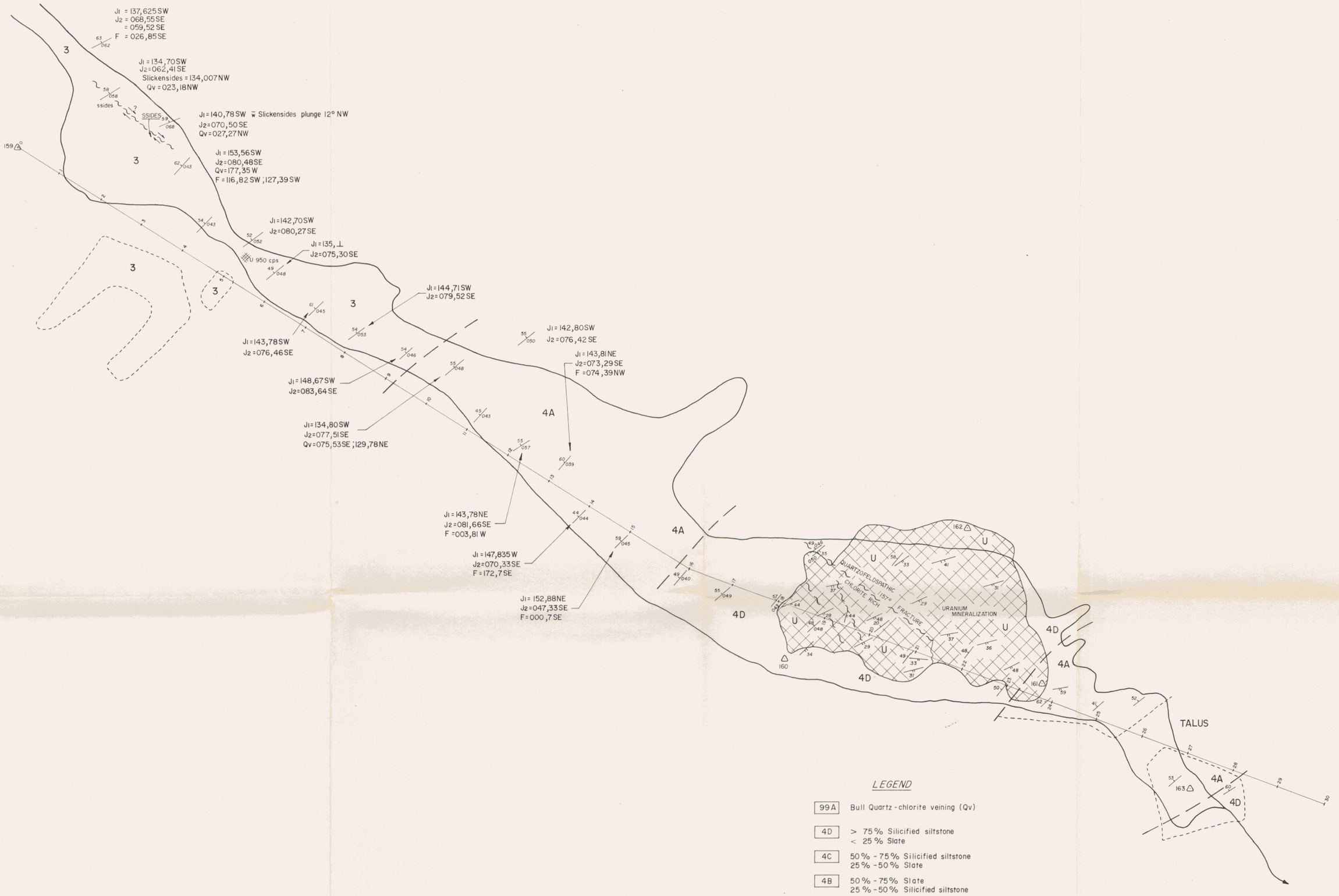
NTS 106 E/1

YUKON TERRITORY

SCALE IN METRES 5 0 5 10 15

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	11



LEGEND

99A	Bull Quartz - chlorite veining (Qv)
4D	> 75 % Silicified siltstone < 25 % Slate
4C	50 % - 75 % Silicified siltstone 25 % - 50 % Slate
4B	50 % - 75 % Slate 25 % - 50 % Silicified siltstone
4A	> 75 % Slate < 25 % Silicified siltstone
3	Slates ; variable green, brown grey
	Chlorite Veining
	Uranium mineralization (counts per second Per B.G.S.I.S.L.)
J_1	Principal Joint } Strike, Dip
J_2	Minor Joint
F	Prominent Fracture
L_1	Principal Lineation } Trend, Plunge
L_2	Weak Lineation
12/042	Bedding Attitude
40/037	Quartz Vein Attitude
18 △	Survey Station
------	Outcrop Limit
∿∿∿∿	Geologic Fault
— — —	Geologic Contact.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON CLAIMS

TRENCH No. 1 - GEOLOGY

YUKON TERRITORY
N.T.S. 106 E/1
METRES

0 1/2 1 2 3 4

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
Altair	Fairchild	Nov. 1978	12


1+20 W.
0+80 W.
0+40 W.
0+00 BASELINE
0+40 E.
0+80 E.
1+20 E.
1+60 E.
2+00 E.
2+40 E.
2+80 E.
3+20 E.
3+60 E.
4+00 E.
4+40 E.
1+20 N.
0+80 N.
0+40 N.
0+00
0+40 S.
0+80 S.
1+20 S.
1+60 S.
2+00 S.
2+40 S.
2+80 S.
3+20 S.
3+60 S.
4+00 S.
4+40 S.
4+80 S.
5+20 S.
5+60 S.
6+00 S.
N
Legend
Grid Station
1165 Topographic Contour
MOUNTAINEER-PAN OCEAN JOINT VENTURE
DEER CLAIMS
TOPOGRAPHIC CONTOURS
5 M INTERVALS
N.T.S. 106 E/2
YUKON TERRITORY
SCALE IN METRES
40 30 20 10 0 20 40
PAMICON DEVELOPMENTS LTD.
DRAWN BY: Altair
PROJECT: Fairchild
DATE: Nov. 1978
FIGURE No. 21

1+20 W. — 0+80 W. — 0+40 W. — 0+00 BASELINE — 0+40 E. — 0+80 E. — 1+20 E. — 1+60 E. — 2+00 E. — 2+40 E. — 2+80 E. — 3+20 E. — 3+60 E. — 4+00 E. — 4+40 E.

1+20 N. — 0+80 N. — 0+40 N. — 0+00 — 0+40 S. — 0+80 S. — 1+20 S. — 1+60 S. — 2+00 S. — 2+40 S. — 2+80 S. — 3+20 S. — 3+60 S. — 4+00 S. — 4+40 S. — 4+80 S. — 5+20 S. — 5+60 S. — 6+00 S.

N

UPPER METAMORPHIC PHYLLITIC SILTSTONE GROUP

LOWER METAMORPHIC SCHISTOSE SILTSTONE GROUP

NON-METAMORPHIC SILTSTONE GROUP

undivided lg

le-UM

le-LM

lb

lg

Unit 99B

Float Train

DDH 78-D1,2,3

D.D.H. 78 D-4,5

DDH 18D6

Increasing Metamorphism

le-8 float

le-5

le-7

lb rubble

lb float

Coarse-Grain Schist Subcrop

Medium-Grain Schist Subcrop

99B float

Drainage

Route

Subsurface

Rusty lb float

thick overburden

subsurface lb rubble

lb & schistose siltstone float

Anomalous radioactivity in spring

SPRING

LEGEND

- Schistosity attitude
- Bedding attitude
- Embankment
- Trench boundary
- Outcrop limits
- Spring or seep
- Approximate Geologic contact (assumed from float)
- Fault
- x U Uranium Mineralization
- Grid station
- Lamprophyre Dikes
- 99B Quartz-Chlorite-Hematite Bull Quartz Veins
- Bull Quartz-Feldspar Veins, ▫ float
- Primarily Bull Quartz Veins, △ float

LITHOLOGY

UNDIVIDED NON-METAMORPHIC, BANDED SILTSTONE INCLUDING:

lg
- 1 Bleached Banded Siltstone
- 2 Tricolor Banded Siltstone
- 3 Weakly Banded Siltstone
- 4 Banded Green and Cream Siltstone

UPPER METAMORPHIC, PHYLLITIC SILTSTONE, UNDIVIDED INCLUDING:

le-UM
- 5 Variably Phyllitic Siltstone
- 6 Chloritic Phyllitic Siltstone
- 7 Hematite-Chlorite Phyllitic Siltstone

LOWER METAMORPHIC, SCHISTOSE SILTSTONE UNDIVIDED

le-LM
- 8 Hematite-Chlorite Schistose Siltstone
- 9 Chloritic Schistose Siltstone
- 10 Fractured Schistose Siltstone

lb — SCHIST, QUARTZ-CHLORITE-SERICITE BEARING

MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

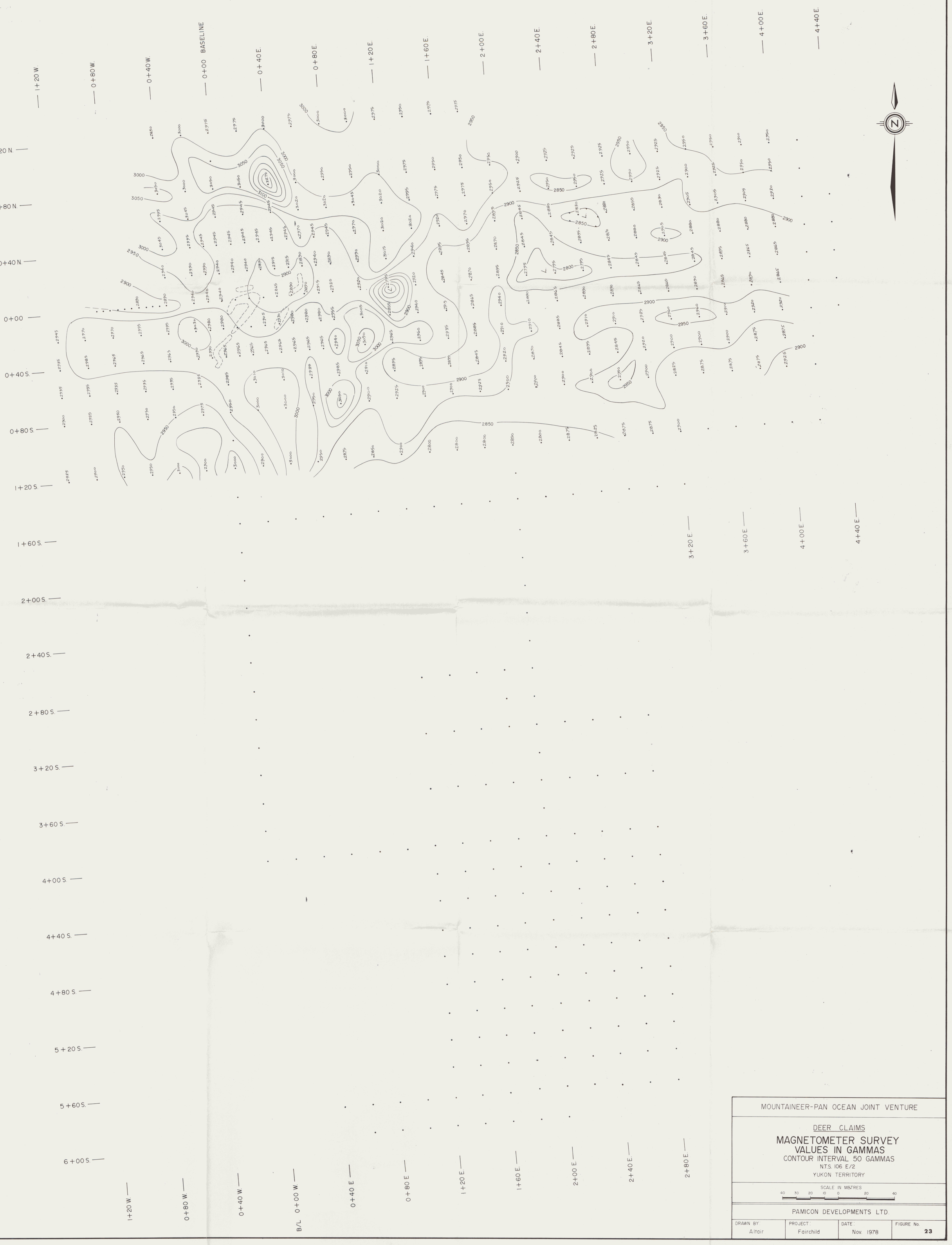
PRELIMINARY GEOLOGICAL MAP

N.T.S. 106 E/2
YUKON TERRITORY

SCALE IN METRES
40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	22



MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

MAGNETOMETER SURVEY
VALUES IN GAMMAS

CONTOUR INTERVAL 50 GAMMAS

N.T.S. 106 E/2

YUKON TERRITORY

SCALE IN METRES

40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	23

MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

GRID No. I

SPECTROMETER SURVEY-TOTAL C.P.S.

CONTOUR INTERVAL 5 c.p.s.

N.T.S. 106 E/2

YUKON TERRITORY

SCALE IN METRES

40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	24

1+20 W. — 0+80 W. — 0+40 W. — 0+00 BASELINE — 0+40 E. — 0+80 E. — 1+20 E. — 1+60 E. — 2+00 E. — 2+40 E. — 2+80 E. — 3+20 E. — 3+60 E. — 4+00 E. — 4+40 E.

1+20 N. —
0+80 N. —
0+40 N. —
0+00 —
0+40 S. —
0+80 S. —
1+20 S. —
1+60 S. —
2+00 S. —
2+40 S. —
2+80 S. —
3+20 S. —
3+60 S. —
4+00 S. —
4+40 S. —
4+80 S. —
5+20 S. —
5+60 S. —
6+00 S. —

1+20 W. — 0+80 W. — 0+40 W. — B/L 0+00 W. — 0+40 E. — 0+80 E. — 1+20 E. — 1+60 E. — 2+00 E. — 2+40 E. — 2+80 E. — 3+20 E. — 3+60 E. — 4+00 E. — 4+40 E.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

SPECTROMETER SURVEY
U/Th RATIO MAP

CONTOUR INTERVAL 0.5 ppm.

N.T.S. 106 E/2

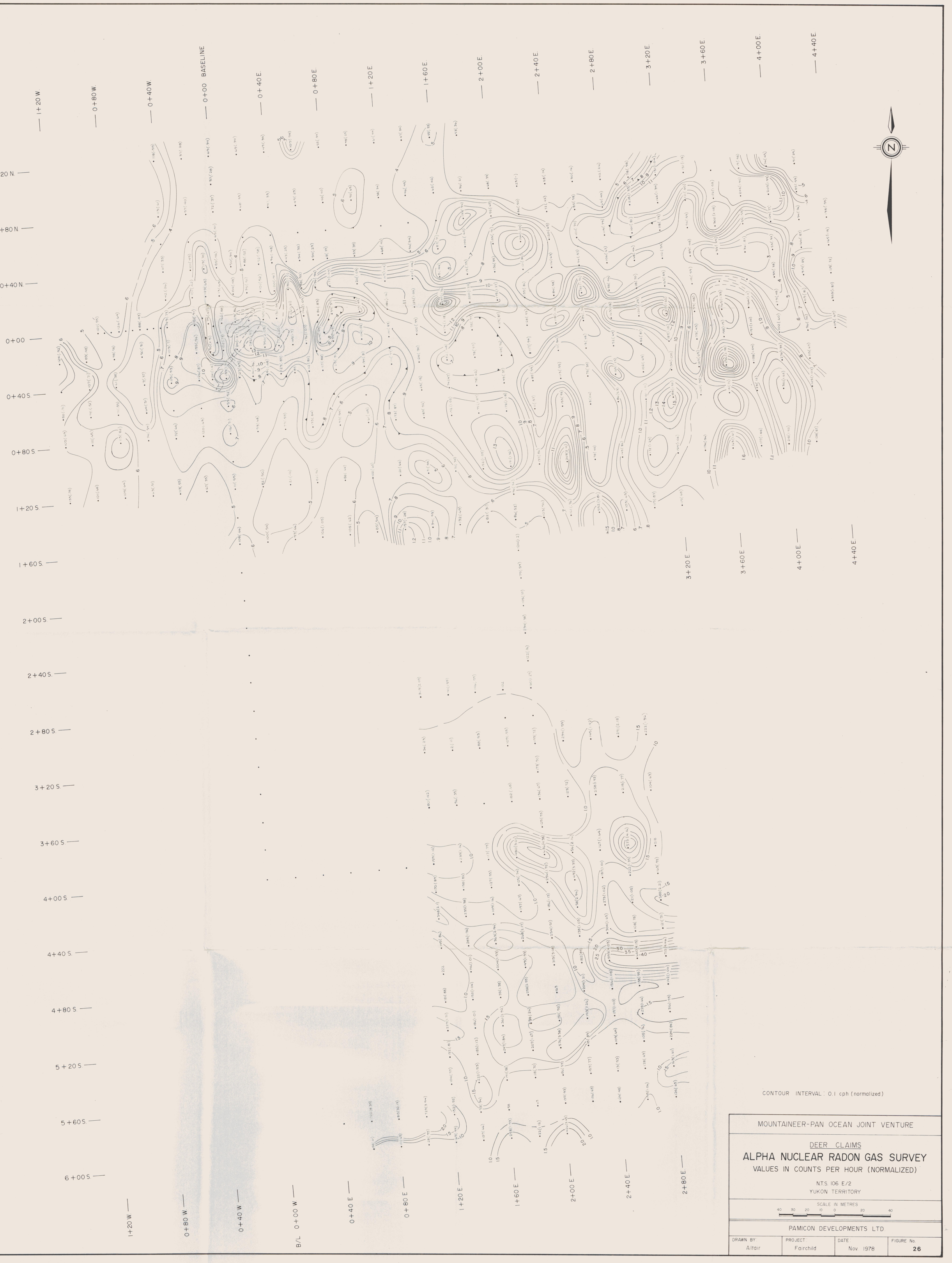
YUKON TERRITORY

SCALE IN METRES

40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	25



MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

ALPHA NUCLEAR RADON GAS SURVEY

VALUES IN COUNTS PER HOUR (NORMALIZED)

N.T.S. 106 E/2

YUKON TERRITORY

SCALE IN METRES

40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD

DRAWN BY	PROJECT	DATE	FIGURE No.
Altair	Fairchild	Nov. 1978	26

MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

ALPHA NUCLEAR RADON GAS SURVEY
CONTOUR MAP

N.T.S. 106 E/2

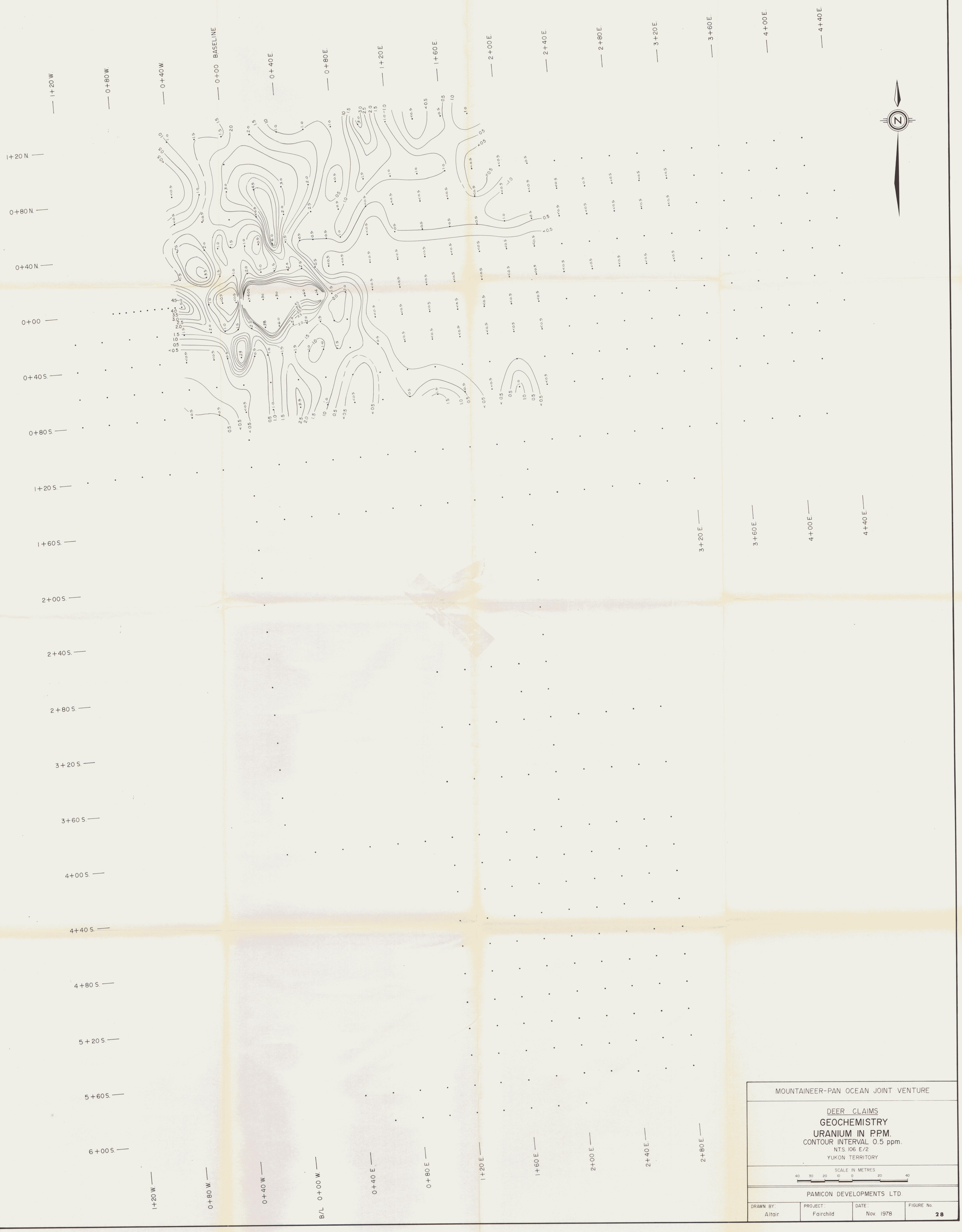
YUKON TERRITORY

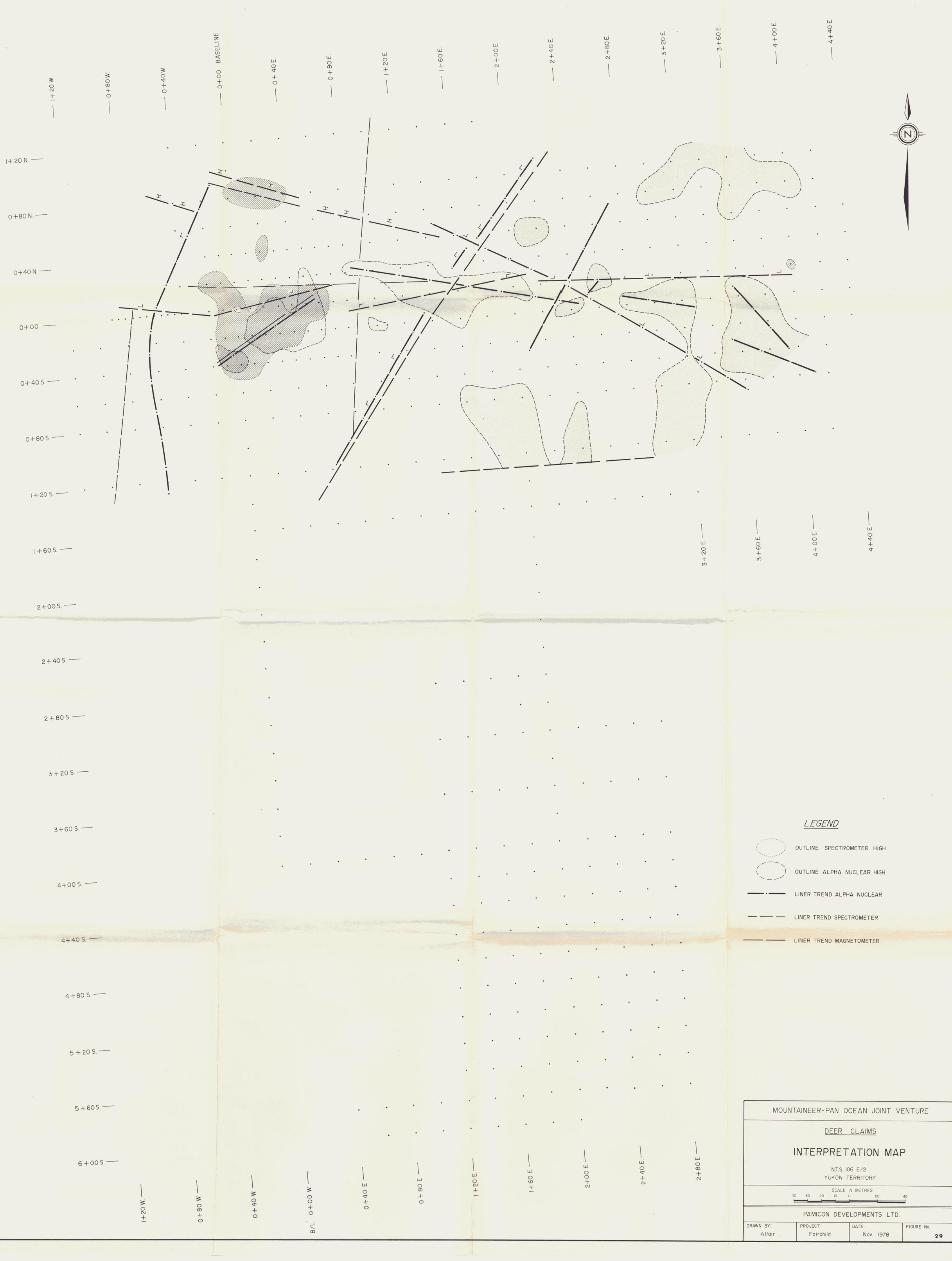
SCALE IN METRES

40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov 1978	27


1+20 W.
0+80 W.
0+40 W.
0+00 BASELINE
0+40 E.
0+80 E.
1+20 E
1+60 E.
2+00 E.
2+40 E.
2+80 E.
3+20 E.
3+60 E.
4+00 E.
4+40 E.
1+20 N.
0+80 N.
0+40 N.
0+00
0+40 S.
0+80 S.
1+20 S.
1+60 S.
2+00 S.
2+40 S.
2+80 S.
3+20 S.
3+60 S.
4+00 S.
4+40 S.
4+80 S.
5+20 S.
5+60 S.
6+00 S.
N
MOUNTAINEER-PAN OCEAN JOINT VENTURE
DEER CLAIMS
GEOCHEMISTRY
URANIUM IN P.P.M.
CONTOUR INTERVAL 0.5 ppm.
N.T.S. 106 E/2
YUKON TERRITORY
SCALE IN METRES
40 30 20 10 0 20 40
PAMICON DEVELOPMENTS LTD.
DRAWN BY: Altair
PROJECT: Fairchild
DATE: Nov. 1978
FIGURE No. 28



MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER CLAIMS

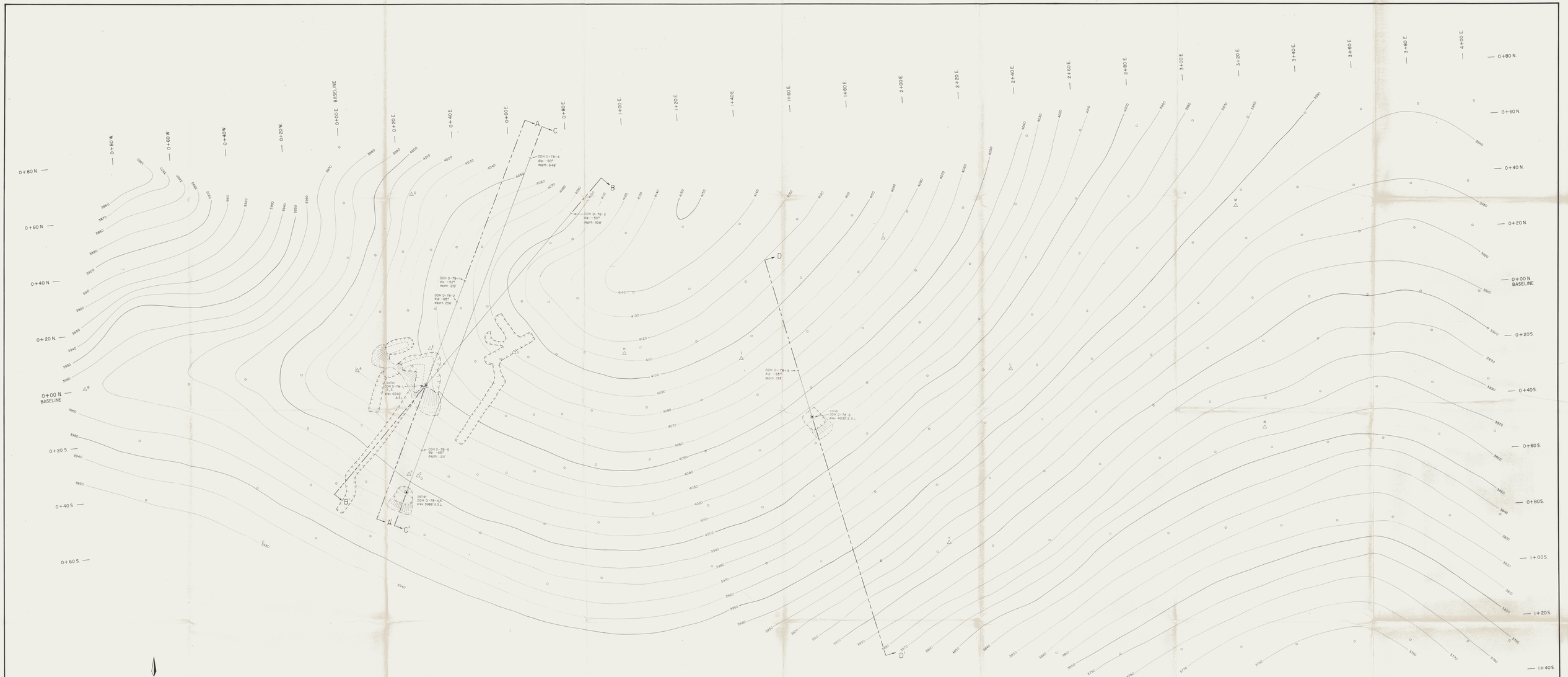
INTERPRETATION MAP

N.T.S. 106 E/2
YUKON TERRITORY

SCALE IN METRES
40 30 20 10 0 20 40

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Nov. 1978	29



LEGEND

- PLANE TABLE SURVEY STATION
- PICKET GRID STATION
- DIAMOND DRILL HOLE COLLAR
- TRENCH OUTLINE
- DUMP

Topographic contours in feet above sea level

MOUNTAINEER-PAN OCEAN JOINT VENTURE

DEER NO. 1 AREA

PLANE TABLE SURVEY

NTS 106 E/2
YUKON TERRITORY

SCALE IN FEET

PAMICON DEVELOPMENTS LTD.

DRAWN BY	PROJECT	DATE	FIGURE No.
Altair	Fairchild	Nov 1978	30

A

A'

4100'

4050'

4000'

3950'

3900'

3850'

3800'

3750'

3700'

3650'

3600'

3550'

3500'

3450'

200 GAMMAS 100 0

400 300 GAMMAS 200 100 0

-50'

87

-100'

-150'

-200'

250'

81

150'

200'

100'

50'

2 2 2 3a 3 4 99b 4 99b 5 99b 5 99b 4 99a 4 99b 5 6 5 7 8 8

DDH D-78-1

DDH- D-78-2

DDH D-78-1

az: 020°
dip: -52°
elev: 4040' A.S.L.
depth: 219' (66.8m)
casing: 28' (8.5m)
started: Aug. 13/1978
completed: Aug. 21,/1978
radiometric log: Aug.18-21/1978
core size: HQ

DDH D-78-2

az: 020°
dip: -65°
elev: 4040' A.S.L.
depth: 256' (78.0m)
casing: 51' (15.5m)
started: Aug. 21/1978
completed: Aug.26/1978
radiometric log: Aug.23-26/1978
core size: HQ

020°
200°

LITHOLOGY

UPPER NON METAMORPHIC SERIES
- Unit 1: Bleached Banded Siltstone
  - 1a: weakly banded 1b - silicified
- Unit 2: Tricolour Banded Siltstone
- Unit 3: Weakly Banded Siltstone
  - 3a: - crackled 3p - phyllitic

LOWER NON METAMORPHIC SERIES
- Unit 4: Banded Green and Cream Siltstone

UPPER METAMORPHIC SERIES
- Unit 5: Variably Phyllitic Siltstone
- Unit 6: Chloritic Phyllitic Siltstone
- Unit 7: Hematite - Chlorite Phyllitic Siltstone

LOWER METAMORPHIC SERIES
- Unit 8: Hematite - Chlorite Schistose Siltstone
  - 8a: weakly banded
- Unit 9: Chloritic Schistose Siltstone
  - 9a: weakly banded 9b - weakly bleached
  - 9c: siliceous 9d - tricolour banded
- Unit 10: Fractured Schistose Siltstone

INTRUSIVE STAGES
- Unit 99: Bull quartz vein
- Unit 99a: Quartz - chlorite vein
- Unit 99b: Quartz - chlorite - hematite vein
- Unit 99c: Quartz - hematite vein
- Radioactive Zones

NOTE: Geology is shown in the right hand portion of the drill sections; radioactive zones in the left hand portion. The radiometric logs are shown beside the drill holes; values are in gammas where one gamma represents 1 count per second (total count) recorded on a Mt. Sopris Model 1000c Gamma Ray Counter equipped with a G-375 A Standard Combination Probe.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

SECTION A-A'

DDH D-78-1 & 2

DEER NO. 1 AREA

N.T.S. 106-E-2
YUKON TERRITORY

PAMICON DEVELOPMENTS LIMITED

SCALE
FEET 30 15 0 30 60 FEET

DRAWN:	PROJECT:	DATE:	FIG.
Altair	FAIRCHILD	Nov. 1978	31

B

B'

4100'

4050'

4000'

3950'

3900'

3850'

3800'

3750'

3700'

3650'

3600'

3550'

3500'

3450'

GAMMAS 400 300 200 100 0

-50'

-100'

-150'

-200'

-250'

-300'

-350'

-400'

75 54 100 370 80 61

1 1a 2 2 2&3 interbedded 3 99a 4 99a 4 gouge 5 99b 5 5 6 7 8 9 9 9c 99 9c 5 99a 5 9 9d 9 5 99b 99b 5 10 9 9a 10 8a

DDH D-78-3

DDH D-78-3
az: 040°
dip: -50°
elev: 4040' A.S.L.
depth: 408' (124.4m)
casing: 34' (10.4m)
started: Aug. 26 / 1978
completed: Sept. 3 / 1978
radiometric log: Sept. 2-3 / 1978
core size: HQ

040°
220°

LITHOLOGY

UPPER NON METAMORPHIC SERIES

Unit 1: Bleached Banded Siltstone
1a: weakly banded 1b - silicified
Unit 2: Tricolour Banded Siltstone
Unit 3: Weakly Banded Siltstone
3a: - crackled 3p - phyllitic

LOWER NON METAMORPHIC SERIES

Unit 4: Banded Green and Cream Siltstone

UPPER METAMORPHIC SERIES

Unit 5: Variably Phyllitic Siltstone
Unit 6: Chloritic Phyllitic Siltstone
Unit 7: Hematite - Chlorite Phyllitic Siltstone

LOWER METAMORPHIC SERIES

Unit 8: Hematite - Chlorite Schistose Siltstone
8a: weakly banded
Unit 9: Chloritic Schistose Siltstone
9a: weakly banded 9b - weakly bleached
9c: siliceous 9d - tricolour banded
Unit 10: Fractured Schistose Siltstone

INTRUSIVE STAGES

Unit 99: Bull quartz vein

Unit 99a: Quartz - chlorite vein

Unit 99b: Quartz - chlorite - hematite vein

Unit 99c: Quartz - hematite vein

Radioactive Zones

NOTE: Geology is shown in the right hand portion of the drill sections; radioactive zones in the left hand portion. The radiometric logs are shown beside the drill holes; values are in gammas where one gamma represents 1 count per second (total count) recorded on a Mt. Sopris Model 1000c Gamma Ray Counter equipped with a G-375 A Standard Combination Probe.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

SECTION B-B'

DDH D-78-3

DEER NO. 1 AREA

N.T.S. 106-E-2
YUKON TERRITORY

PAMICON DEVELOPMENTS LIMITED

SCALE
FEET 30 15 0 30 60 FEET

DRAWN:	PROJECT:	DATE:	FIG.
Altair	FAIRCHILD	Nov. 1978	32

C

C'

4100'

4050'

4000'

3950'

3900'

3850'

3800'

3750'

3700'

3650'

3600'

3550'

3500'

3450'

100 GAMMAS
0
100 GAMMAS
0

3
1b
2
1b
2
1b
3a
2
2
50'
50'
100'
5
100'
150'
5
200'
7
250'
99b
300'
57
350'
81
8
56
63
82
400'
9
9a
9
9b
65
9a
450'
9b
9
9
gouge
500'
8
550'
600'
9a
9

DDH D-78-5

DDH D-78-4

DDH D-78-5

az: 020°
dip: -65°
elev: 3988' A.S.L.
depth: 125' (38.1m)
casing: 30' (9.1m)
started: Sept. 12 / 1978
completed: Sept. 16 / 1978
radiometric log: Sept. 16/1978
core size: HQ

DDH D-78-4

az: 020°
dip: -50°
elev: 3988' A.S.L.
depth: 648' (197.5m)
casing: 30' (9.1m)
started: Sept. 3 / 1978
completed: Sept. 12 / 1978
radiometric log: Sept. 10-12 / 1978
core size: HQ / NQ

020°
200°

LITHOLOGY

UPPER NON METAMORPHIC SERIES

Unit 1: Bleached Banded Siltstone
1a. weakly banded 1b - silicified
Unit 2: Tricolour Banded Siltstone
Unit 3: Weakly Banded Siltstone
3a: - crackled 3p - phyllitic

LOWER NON METAMORPHIC SERIES

Unit 4: Banded Green and Cream Siltstone

UPPER METAMORPHIC SERIES

Unit 5: Variably Phyllitic Siltstone
Unit 6: Chloritic Phyllitic Siltstone
Unit 7: Hematite - Chlorite Phyllitic Siltstone

LOWER METAMORPHIC SERIES

Unit 8: Hematite - Chlorite Schistose Siltstone
8a: weakly banded
Unit 9: Chloritic Schistose Siltstone
9a: weakly banded 9b - weakly bleached
9c: siliceous 9d - tricolour banded
Unit 10: Fractured Schistose Siltstone

INTRUSIVE STAGES

Unit 99: Bull quartz vein

Unit 99a: Quartz - chlorite vein

Unit 99b: Quartz - chlorite - hematite vein

Unit 99c: Quartz - hematite vein

Radioactive Zones

NOTE:
Geology is shown in the right hand portion of the drill sections; radioactive zones in the left hand portion. The radiometric logs are shown beside the drill holes; values are in gammas where one gamma represents 1 count per second (total count) recorded on a Mt. Sopris Model 1000c Gamma Ray Counter equipped with a G-375 A Standard Combination Probe.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

SECTION C-C'

DDH D-78-4&5

DEER NO. 1 AREA

N.T.S. 106-E-2
YUKON TERRITORY

PAMICON DEVELOPMENTS LIMITED

SCALE
FEET 30 15 0 30 60 FEET

DRAWN:	PROJECT:	DATE:	FIG.
Altair	FAIRCHILD	Nov. 1978	33

4100'

4050'

4000'

3950'

3900'

3850'

3800'

3750'

3700'

3650'

3600'

3550'

3500'

3450'

100 GAMMAS

0

-50'

-100'

8

DDH D-78-6

az: 343°
dip: -65°
elev: 4033' A.S.L.
depth: 133' (40.5m)
casing: 30' (9.1m)
started: Sept. 17 / 1978
completed: Oct. 4 / 1978
radiometric log: Sept. 24 / 1978
core size: HQ

343°
163°

LITHOLOGY

UPPER NON METAMORPHIC SERIES

Unit 1: Bleached Banded Siltstone
1a: weakly banded 1b - silicified
Unit 2: Tricolour Banded Siltstone
Unit 3: Weakly Banded Siltstone
3a: - crackled 3p - phyllitic

LOWER NON METAMORPHIC SERIES

Unit 4: Banded Green and Cream Siltstone

UPPER METAMORPHIC SERIES

Unit 5: Variably Phyllitic Siltstone
Unit 6: Chloritic Phyllitic Siltstone
Unit 7: Hematite - Chlorite Phyllitic Siltstone

LOWER METAMORPHIC SERIES

Unit 8: Hematite - Chlorite Schistose Siltstone
8a: weakly banded
Unit 9: Chloritic Schistose Siltstone
9a: weakly banded 9b - weakly bleached
9c: siliceous 9d - tricolour banded
Unit 10: Fractured Schistose Siltstone

INTRUSIVE STAGES

Unit 99: Bull quartz vein

Unit 99a: Quartz - chlorite vein

Unit 99b: Quartz - chlorite - hematite vein

Unit 99c: Quartz - hematite vein

Radioactive Zones

NOTE: Geology is shown in the right hand portion of the drill sections; radioactive zones in the left hand portion. The radiometric logs are shown beside the drill holes; values are in gammas where one gamma represents 1 count per second (total count) recorded on a Mt. Sopris Model 1000c Gamma Ray Counter equipped with a G-375 A Standard Combination Probe.

SECTION D-D'

DDH D-78-6

DEER NO. 1 AREA

N.T.S. 106-E-2
YUKON TERRITORY

PAMICON DEVELOPMENTS LIMITED

SCALE
FEET 30 15 0 30 60 FEET

DRAWN:	PROJECT:	DATE:	FIG.
Altair	FAIRCHILD	Nov. 1978	34

A

A'

4100'

4050'

4000'

3950'

3900'

3850'

3800'

3750'

3700'

3650'

3600'

3550'

3500'

3450'

DDH D-78-6

DDH D-78-1

DDH D-78-2

DDH D-78-5

DDH D-78-3

DDH D-78-4

020°
200°

LITHOLOGY

UPPER NON METAMORPHIC SERIES

UNM — Unit 1: Bleached Banded Siltstone
1a: weakly banded 1b - silicified
Unit 2: Tricolour Banded Siltstone
Unit 3: Weakly Banded Siltstone
3a: - crackled 3p - phyllitic

LOWER NON METAMORPHIC SERIES

LNM — Unit 4: Banded Green and Cream Siltstone

UPPER METAMORPHIC SERIES

UM — Unit 5: Variably Phyllitic Siltstone
Unit 6: Chloritic Phyllitic Siltstone
Unit 7: Hematite - Chlorite Phyllitic Siltstone

LOWER METAMORPHIC SERIES

LM — Unit 8: Hematite - Chlorite Schistose Siltstone
8a: weakly banded
Unit 9: Chloritic Schistose Siltstone
9a: weakly banded 9b - weakly bleached
9c: siliceous 9d - tricolour banded
Unit 10: Fractured Schistose Siltstone

INTRUSIVE STAGES

Unit 99: Bull quartz vein

Unit 99a: Quartz - chlorite vein

Unit 99b: Quartz - chlorite - hematite vein

Unit 99c: Quartz - hematite vein

Radioactive Zones

NOTE
Diamond drill holes not contained in the plane of the section are shown as dashed lines.

MOUNTAINEER-PAN OCEAN JOINT VENTURE

SECTION A-A'

GEOLOGICAL CROSS SECTION

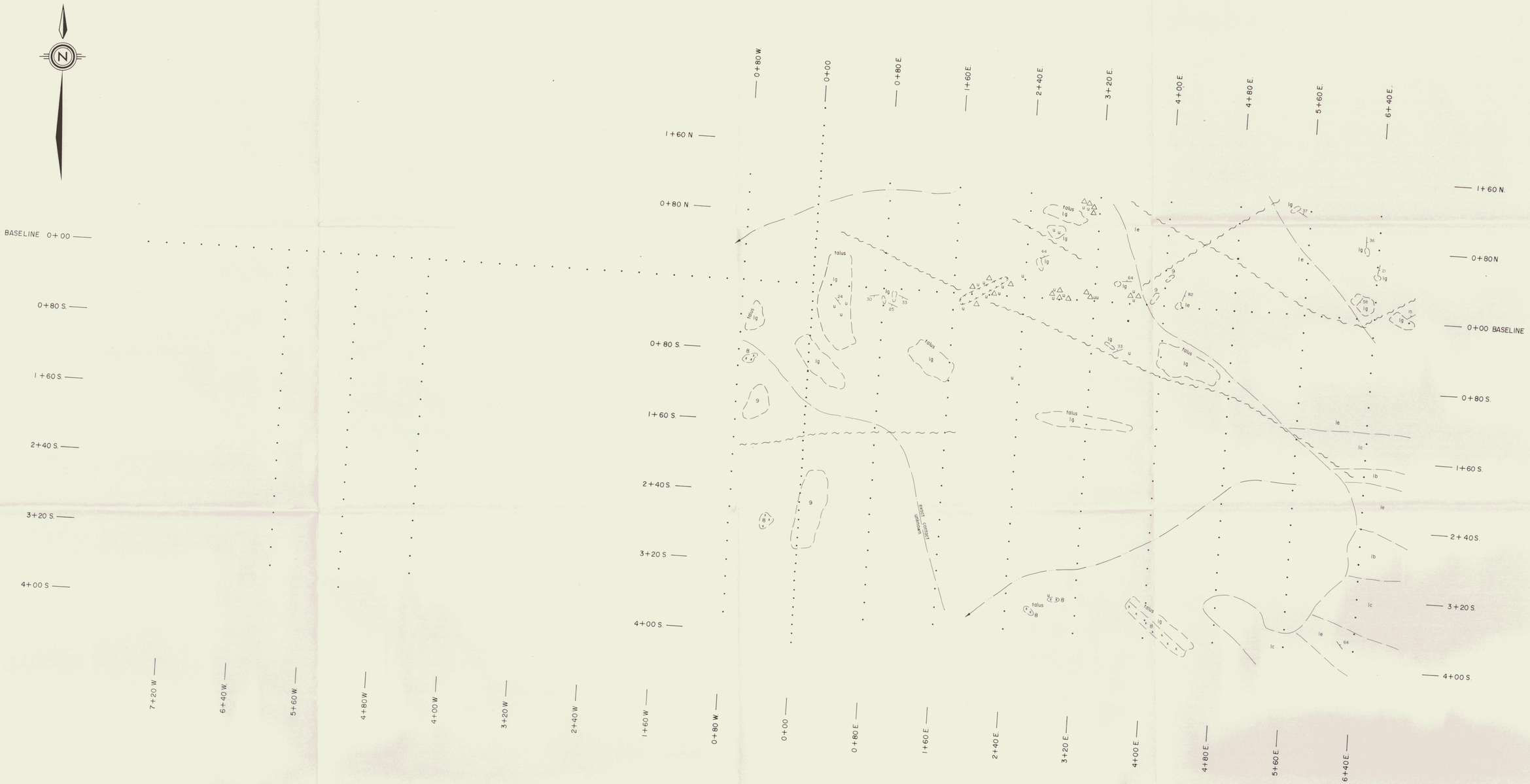
DEER NO. 1 AREA

N.T.S. 106-E -2
YUKON TERRITORY

PAMICON DEVELOPMENTS LIMITED

SCALE
FEET 30 15 0 30 60 FEET

DRAWN:	PROJECT:	DATE:	FIG.
Altair	FAIRCHILD	Nov. 1978	35



SYMBOLS

- Limit of exposure
- Fault
- Approximate geologic contact
- △ Quartz feldspar vein float
- 25 Bedding attitude
- u Uranium occurrence
- Trench outline

LITHOLOGY

- 9 Diorite
- 8 Intrusive Breccia
- lg Siltstone
- le Phyllitic and/or Schistose Siltstone
- lc Phyllite
- lb Schist

MOUNTAINEER - PAN OCEAN JOINT VENTURE

FROG MINERAL CLAIMS

GEOLOGY

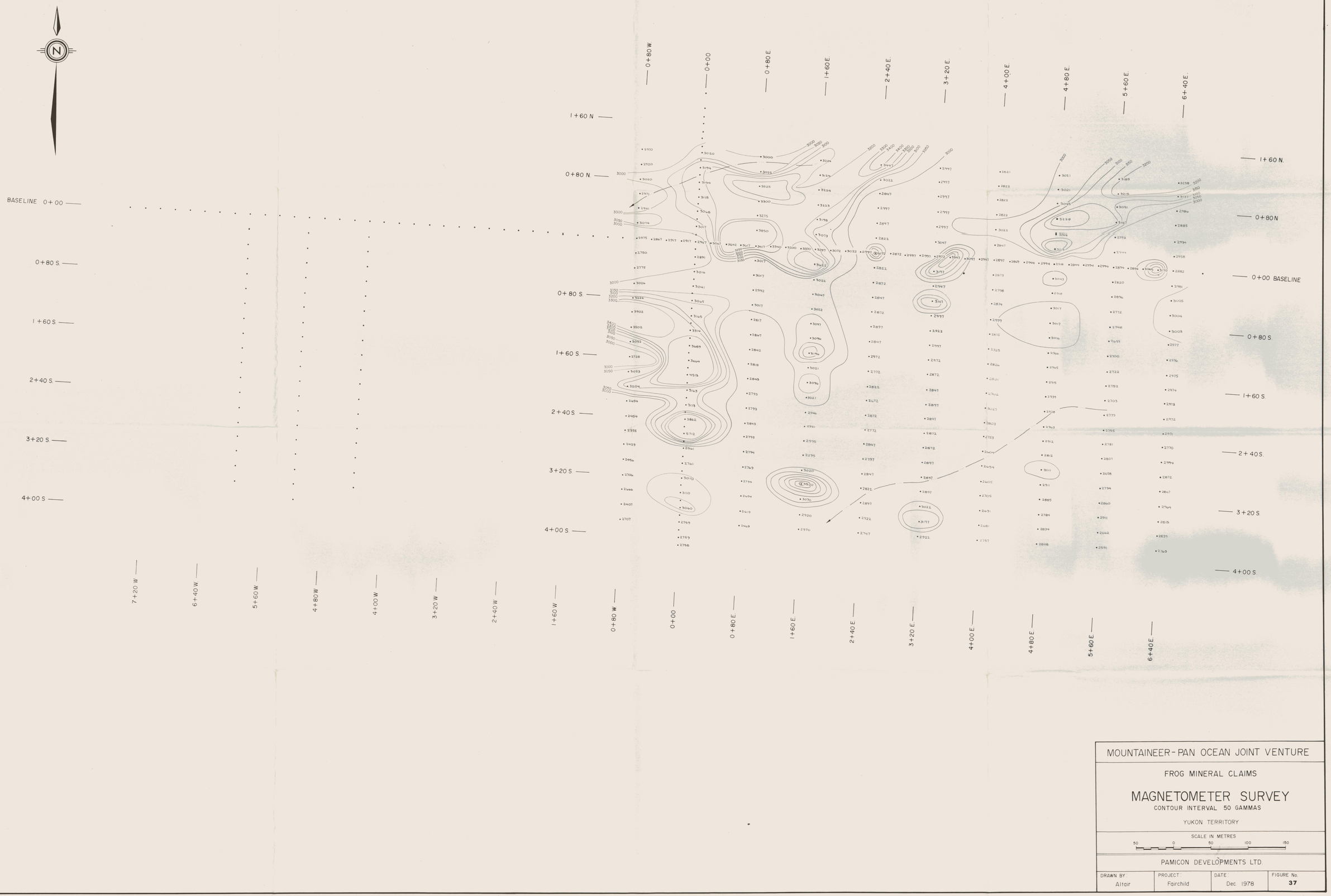
YUKON TERRITORY

SCALE IN METRES

50 0 50 100 150

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Dec. 1978	36



MOUNTAINEER-PAN OCEAN JOINT VENTURE

FROG MINERAL CLAIMS

MAGNETOMETER SURVEY

CONTOUR INTERVAL 50 GAMMAS

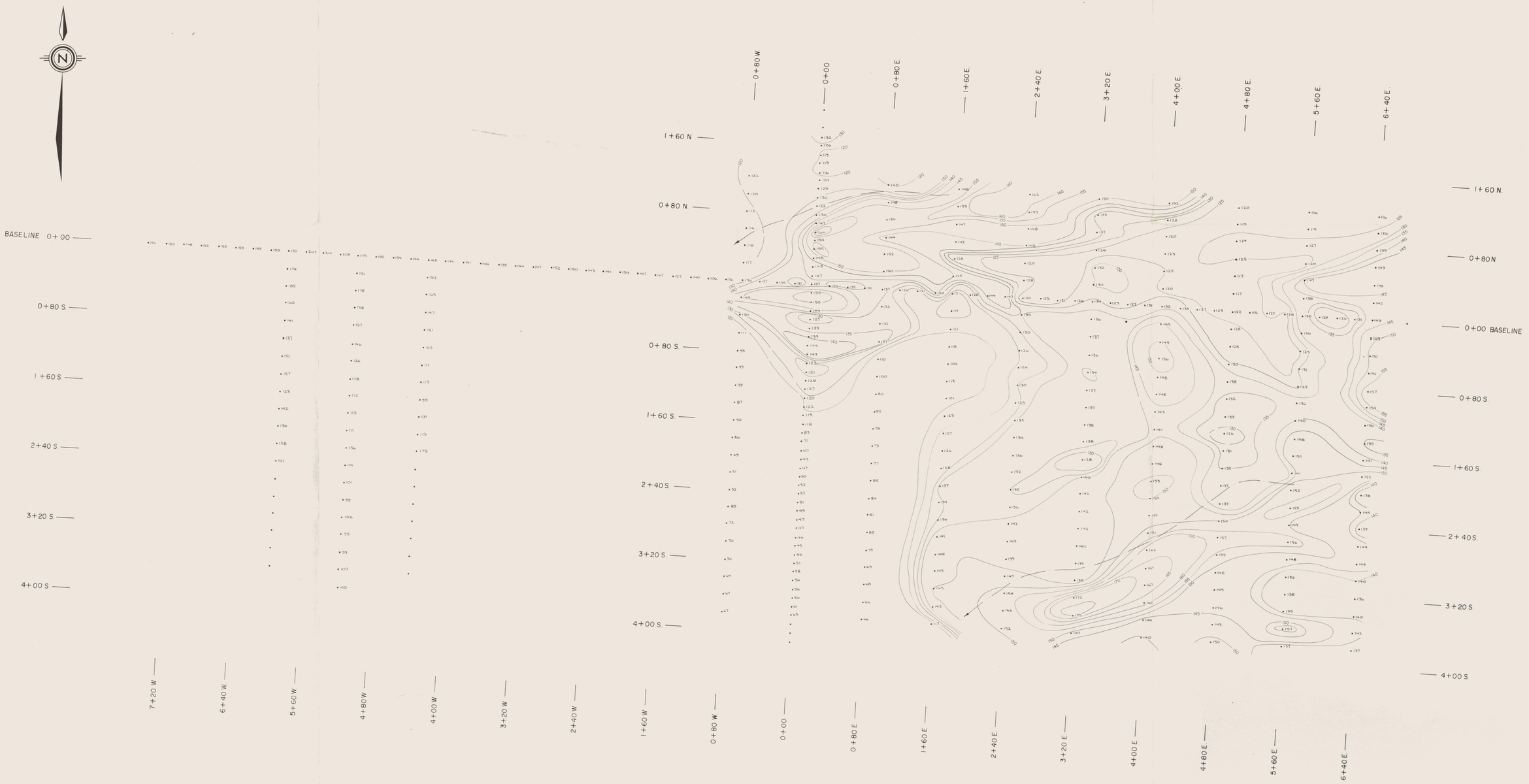
YUKON TERRITORY

SCALE IN METRES

50 0 50 100 150

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Dec. 1978	37



MOUNTAINEER - PAN OCEAN JOINT VENTURE

FROG MINERAL CLAIMS

SPECTROMETER SURVEY

CONTOUR INTERVAL 5 C.P.S.
VALUES TOTAL COUNTS PER SECOND

YUKON TERRITORY

SCALE IN METRES
50 0 50 100 150

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Dec. 1978	38

MOUNTAINEER - PAN OCEAN JOINT VENTURE

FROG MINERAL CLAIMS

GEOCHEMICAL SURVEY

URANIUM IN PPM

YUKON TERRITORY

SCALE IN METRES

50 0 50 100 150

PAMICON DEVELOPMENTS LTD.

DRAWN BY:	PROJECT:	DATE:	FIGURE No.
Altair	Fairchild	Dec. 1978	39

SAMPLE CLASSIFICATION

SOILS

- < 0.8 ppm background
- 0.8 – 3.3 p.p.m. 1st order anomalous
- > 3.3 p.p.m. 2nd anomalous

SILTS

- O < 5.0 ppm background
- O 5.0 – 35.0 ppm 1st order anomalous
- O > 35.0 ppm 2nd order anomalous

WATER

- □ < 1.3 p.p.b. background
- □ 1.3 – 9.0 p.p.b. 1st order anomalous
- □ > 9 p.p.b. 2nd order anomalous

LEGEND

- • Soil sample site – parts per million uranium
- O Silt sample site – parts per million uranium
- □ Water sample site – parts per billion uranium

MOUNTAINEER-PAN OCEAN JOINT VENTURE

LOON-POOL CLAIM AREA

GEOCHEMICAL SURVEY

N.T.S. 106 E 18-2
YUKON TERRITORY

SCALE IN METRES
0 100 200 300 400 500

PAMICON DEVELOPMENTS LTD.

DRAWN BY	PROJECT	DATE	FIGURE No.
Altair	Fairchild	Nov. 1978	40