

Geological, Geochemical and Geophysical Work

performed on the

MTR 9-16, 25-32 and 39-48 Mineral Claims

Located on NTS 106-E-1  
at 65° 09'N, 134° 21'W

in the

Mayo Mining District,  
Yukon

Work performed during September, 1977

on behalf of

NEW MINEX RESOURCES LTD.

By

T.L. Sadlier-Brown and A.E. Nevin, P.Eng.

January 25, 1978

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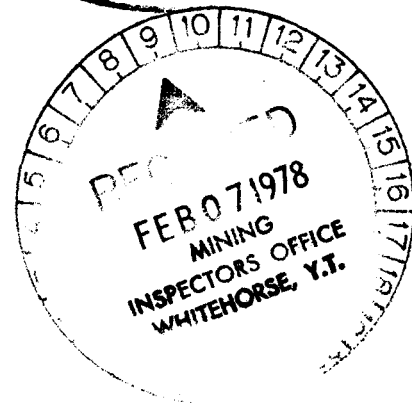
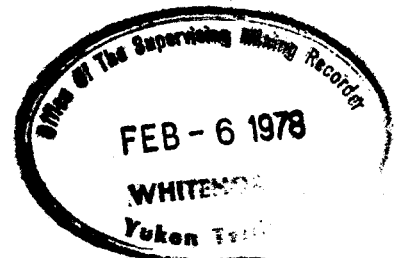
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January 25, 1978



090301

CONSULTING GEOLOGISTS

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$24,000.00

D. S. Craig

Resident Geologist or  
~~Resident Mining Engineer~~

Considered as representation work under  
Section 52 (4) Yukon Quartz Mining Act.

B. R. Baxter

B. R. BAXTER  
Supervising Mining Recorder

Commissioner of the Territory

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## 1.0 INTRODUCTION

### 1.1 Terms of Reference

Field work described in this report was carried out by personnel of Nevin Sadlier-Brown Goodbrand Ltd. between September 1st and September 5th, 1977. It includes geological mapping, geochemical soil sampling, ground radiometric surveying and trenching. The work was done on behalf of New Minex Resources at the request of the company's President, Mr. W. Rauball and is intended to fulfill recommendations set out in a report on a geochemical survey of the property dated October, 1976 by R. Darney and C. Ikona.

### 1.2 Property and Ownership

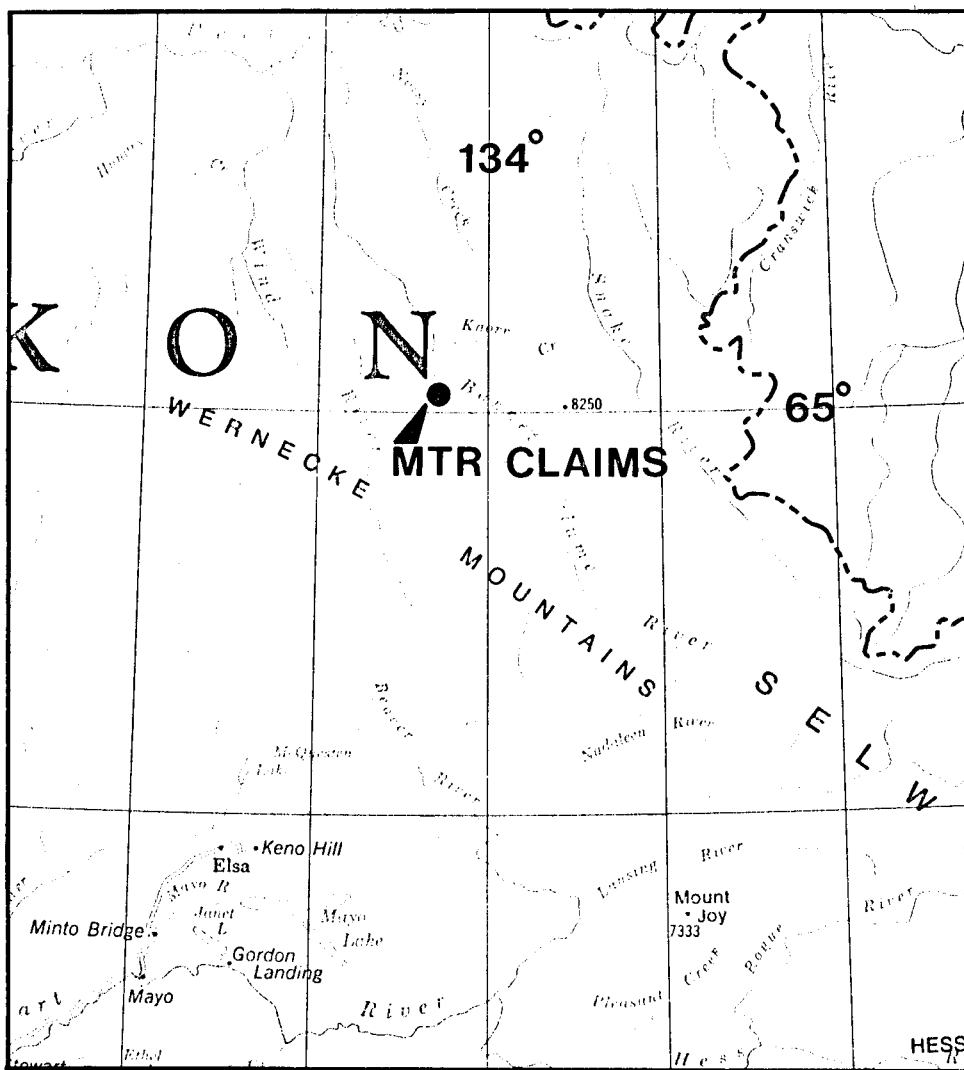
The MTR group consists of 26 full sized mineral claims staked in accordance with the Yukon Quartz Mining Act within the Mayo Mining District, Yukon (Fig.2). The group comprises:

<u>Claim</u>	<u>Tag No.</u>	<u>Staking Date</u>	<u>Recording Date</u>
MTR 9-16	YA 1554-YA1561	24 Jan 1976	2 Feb 1976
MTR 25-32	YA 1570-YA 1577	24 Jan 1976	3 Feb 1976
MTR 39-48	YA 1584-YA1593	24 Jan 1976	3 Feb 1976

The claims were staked by A. Harmon and Associates, of Vancouver, B.C. and subsequently vended to New Minex Resources Ltd., 306-1039 Richards St., Vancouver, B.C.

### 1.3 Location and Access

The property is located on NTS mapsheet 106-E-1 at 65° 09' latitude and 134° 21' longitude in the Quartet Lakes area about 120 miles north of the town of Mayo (Fig.1). Access is by float equipped aircraft to Quartet Lake about 4 miles southwest of the property. Charter fixed and rotary wing aircraft and full expediting services are available in Mayo.



SCALE 1:2,000,000

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LOCATION MAP

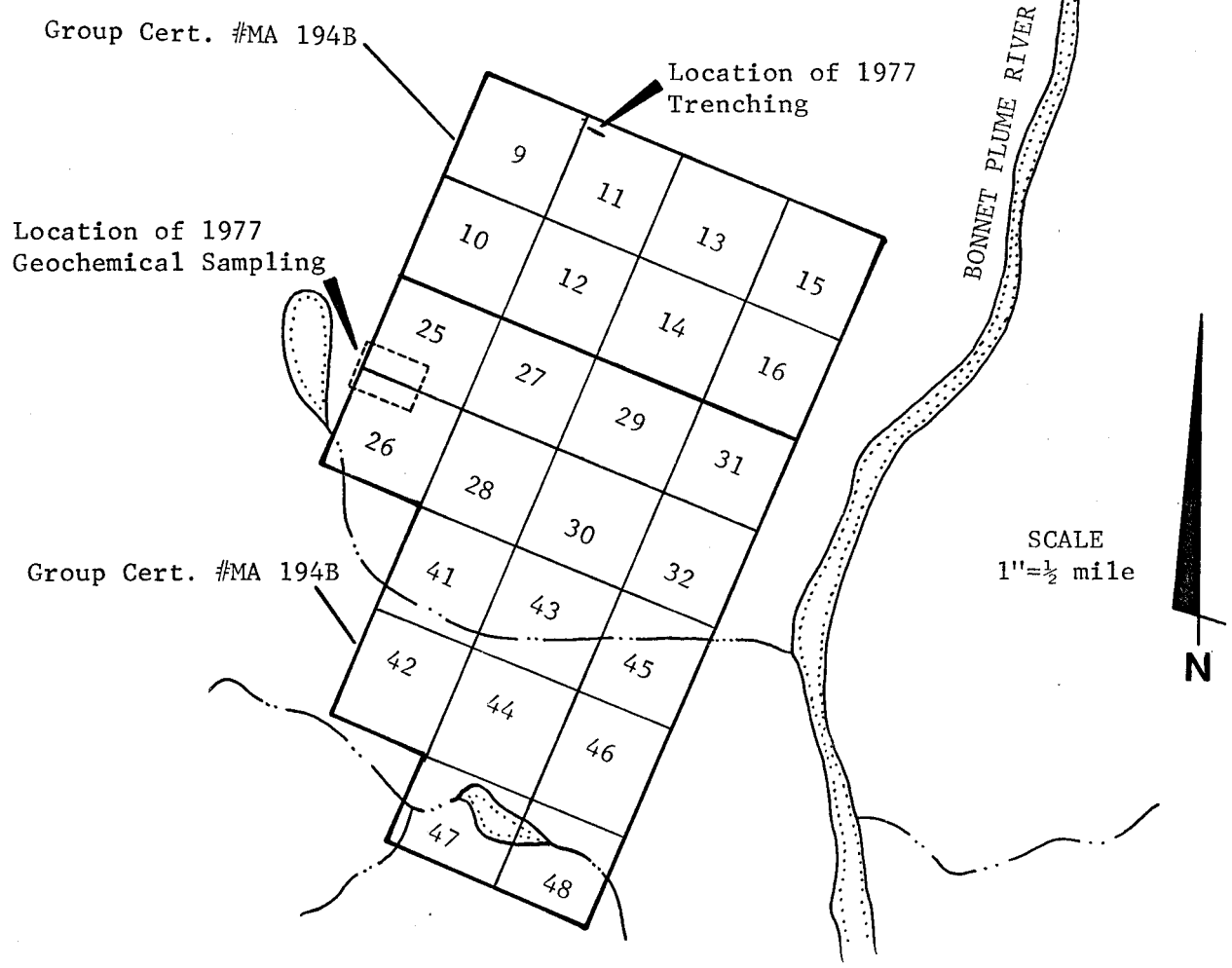
MTR CLAIMS

Mayo Mining District  
Yukon

January, 1978

Fig. 1

65°11'  
134°20'



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CLAIM LOCATION MAP  
MTR CLAIMS

Quartet Lakes Area  
Mayo Mining District  
Yukon

#### 1.4 Geographical Setting

The Quartet Lakes region lies in the Wernecke Mountains of the northeastern Yukon Territory. In the general area, the Werneckes consist of local Ranges which include the Rackla Range, Bonnet Plume Range and Knorr Range. Topography is moderate to rugged with elevations ranging from 2000 to 6500 feet ASL. Major river valleys are broad and tend to be drift filled but ridges and slopes in the mountainous areas above the 4000 foot level tend to be about 60% outcrop.

Forest cover is generally light although in some protected areas, such as the Quartet Lakes basin and some of the major river valleys, stands of spruce are thriving.

Drainage in the area is to the Arctic Sea with the Bonnet Plume River, which passes just east of the claim group, being the most important stream in the area. It is a tributary of the Peel and its valley could become important as a surface access route to the area.

#### 1.5 Previous Work

The district has been mapped by the Geological Survey of Canada and has been described in three publications: Green L.H., 1972 "Geology of Nash Creek, Larsen Creek and Dawson Map-Area, Yukon Territory" G.S.C. Memoir 364; Blusson, S., 1975 "Geology of Nadaleen River and Bonnet Plume Lake Map Sheets" G.S.C. Open File Rept. 205; Norris, D.K., 1975 "Geology of Snake River and Wind River Sheets", G.S.C. Open File Rept. 279.

Some prospecting was done in the area during the Sixties and several companies acquired ground for the purpose of developing copper prospects. Uranium was also known to occur but not until about 1975 did it begin to appear commercially interesting. The MTR claims were staked during the ensuing revival of interest in the area.

In 1976 a geochemical survey of the claims was carried out by Pamicon Developments Ltd. on behalf of New Minex Resources Ltd. and a report on this project entitled "Geochemical Report on the MTR 9-16, 25-32, 39-48 Mineral Claims" was prepared by R. Darney and C. Ikona and dated October, 1976.



## 2.0 GEOLOGICAL OBSERVATIONS

### 2.1 Regional Setting

The regional geology of the Quartet Lakes area has been described by R. Darney (1976) and is included here in its entirety:

In the Quartet-Fairchild-Gillespie Lakes region Helikian rocks are exposed over an area of some 1500 square miles in a roughly circular fashion centered near Longitude 134° 00'W and Latitude 65° 00'N.

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

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

Unit 2, which conformably overlies the uppermost slate-quartzite section of Unit 1, consists mainly of thickly bedded orange weathering dolomites. The base of the Unit is marked by a series of transitional beds of alternating buff weathering dolomites and interbedded slates and quartzites.

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

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 K-spar or strong hemitization and in some instances contain varying amounts of specularite, chalcopyrite and minor uranium mineralization.

Two major periods of deformation have taken place within the Wernecke Mountain region. During the first period or Racklan Orogeny, the Proterozoic rocks of Units 1 and 2 underwent intense folding and faulting. Folds are tight to isoclinal with the development of strong axial plane cleavage and commonly an almost vertical foliation.

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

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

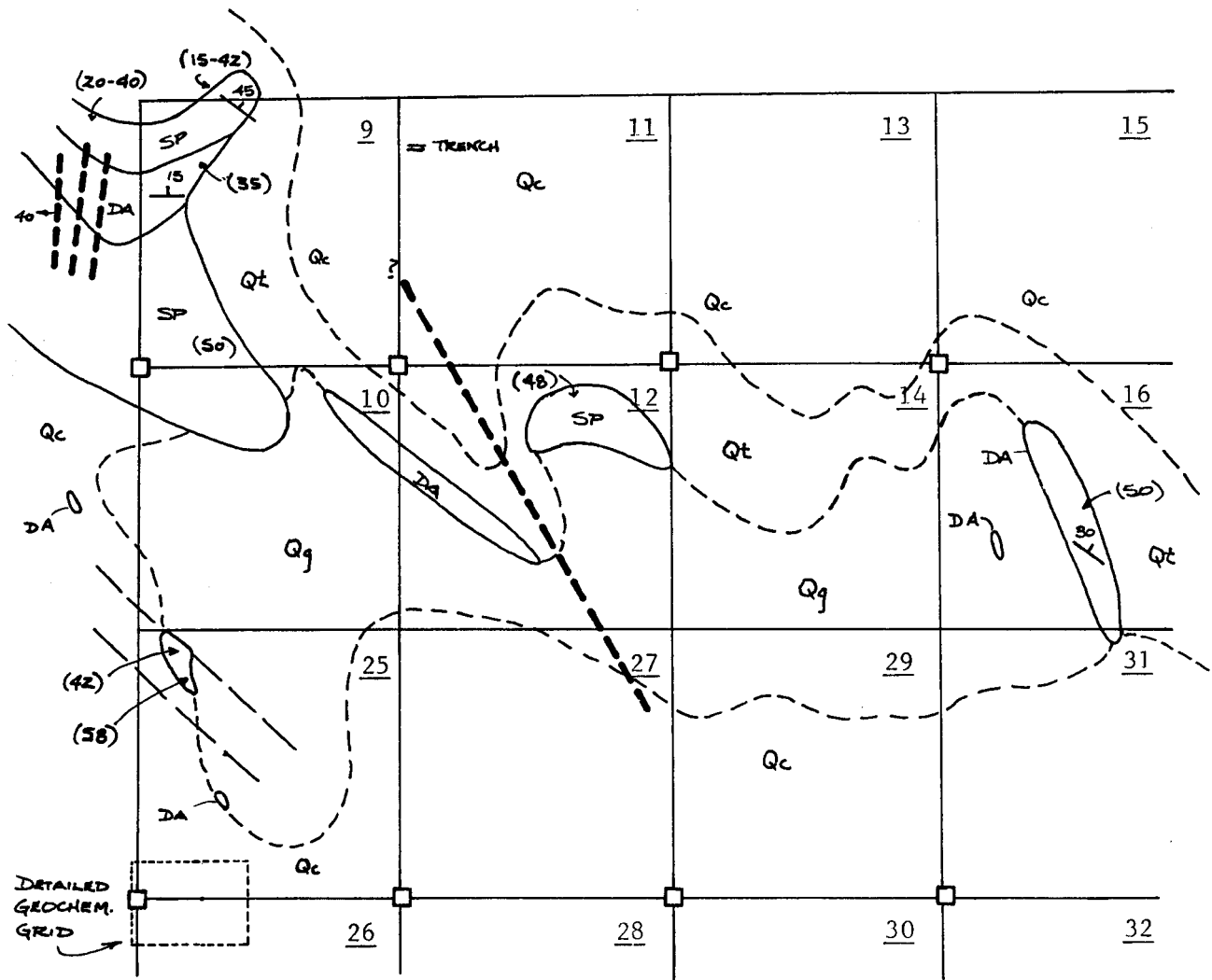
The second period of deformation, which involves both Paleozoic and Proterozoic strata, is weak compared to the first. This is particularly evident in younger Carbonate sections to the west and southwest where deformation consists mainly of broad open folding and minor overthrusting.

## 2.2 Property Geology

Bedrock geology is divided on the geological map (Fig. 3) into two basic units inferred to belong to the Lower Helikian: (1) a schistose phyllite, and (2) interbedded argillite and dolomite. These units appear to be broadly interlayered one with another and have varying character from place to place. Outcrop is restricted to the northern portion of the property.

The schistose phyllite is frequently a soapy-looking rock containing muscovite and chlorite. Frequently quartz is segregated in the bedding planes. The rock locally has metamorphic cleavage, generally at high angles to compositional layering. The interbedded dolomite and argillite range from thinly bedded, that is, in  $\frac{1}{2}$ " layers, to thickly bedded, or more than 5'. Some tuff beds are identifiable within the argillite notably in the easternmost exposures on the bank of the Bonnet Plume River.

In general the rocks strike northwest and dip at



LEGEND

- Qc Colluvium and Alluvium
- Qt Talus
- Qg High Glacial Bench Gravels
- DA Dolomite and Argillite
- SP Schistose Phyllite
- outcrop
- - - inferred contact
- - - overburden demarkation
- - - fault
- (52) BGS-IS scint.(cps)
- claim post & line
- 25 MTR claim number

Scale: 1"=1000'



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GEOLOGICAL MAP  
 North West Part MTR claims  
 Mayo Mining District  
 Yukon

moderate angles to the northeast. The metamorphic cleavage, where noted, strikes northeast and dips vertically or steeply to the northwest. The series is cut by a well-known major regional fault having a strike of about  $030^{\circ}$ , located about 1 claim length to the west of the claim group. This fracture appears to be part of a system of parallel faults inferred within the claim group. Although their traces do not crop out, faults having a similar attitude appear to determine some of the elongate ridges and scarps on the MTR claims. A complimentary set, striking about  $350^{\circ}$  is also suggested. The rocks are not tightly folded, but are broadly warped. Some of the schistose phyllite units contain minor small-scale crenulations which have bearings of  $110^{\circ}$  and plunges of  $20^{\circ}$ .

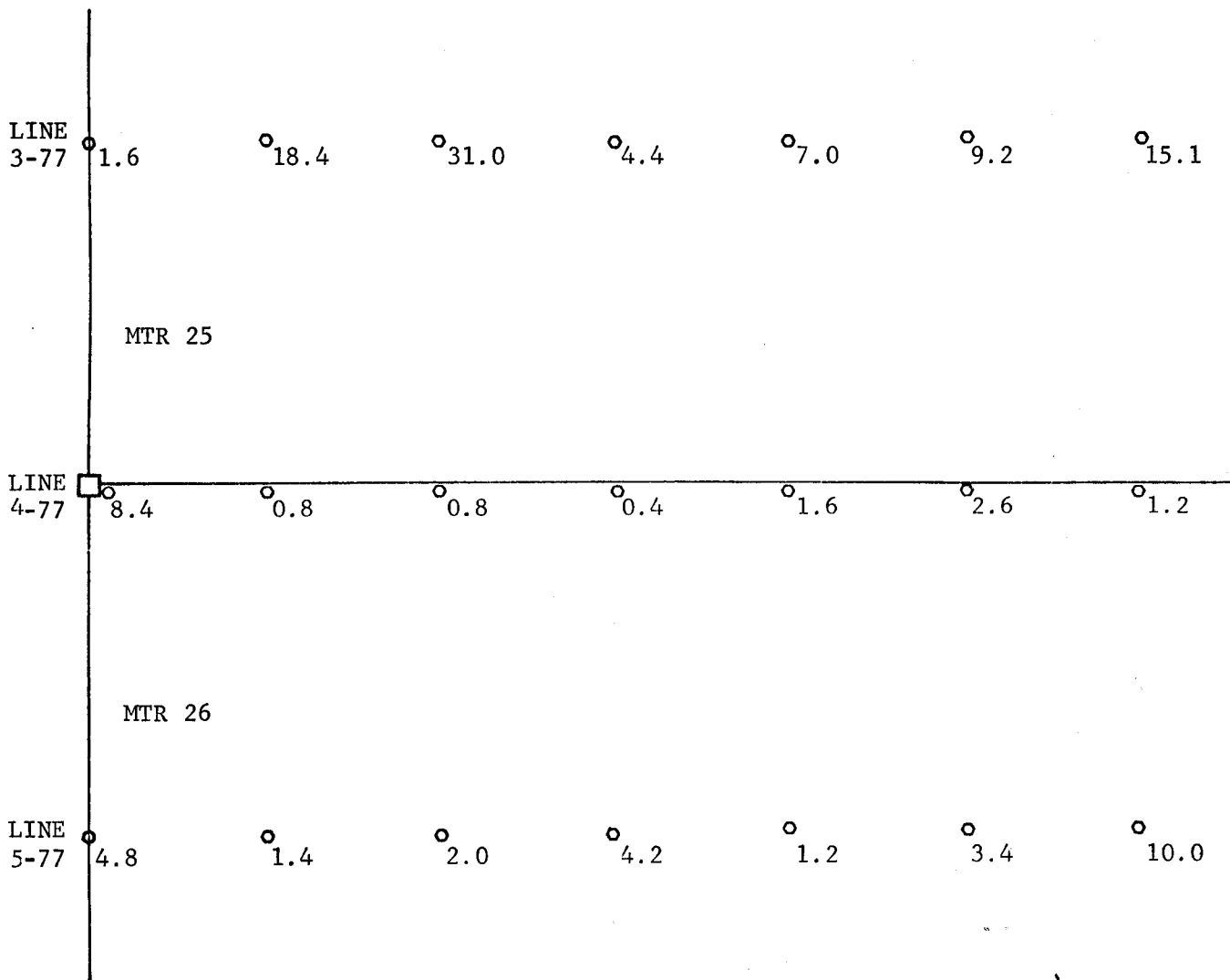
Three classes of overburden are noted on the map. The oldest class is high glacial gravel which lies on the tops of some of the hills, notably the rise on the southern part of claim MTR 14 and the northern part of MTR 29. The next class is talus, which obscures most of the slopes. The third class is ordinary colluvium and alluvium, which form an extensive blanket over most of the claim group.

### 3.0 GEOCHEMICAL OBSERVATIONS

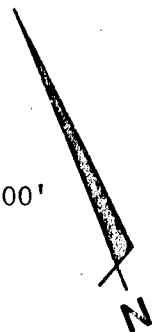
The geochemical sampling program was intended to define the anomalous area outlined by the 1976 work. A total of 21 samples were taken of "B" horizon material at intervals of 100 feet along three chained and flagged lines, lines 3-77, 4-77, and 5-77. Samples were taken using a mattock, placed in paper sample envelopes marked with grid co-ordinates, and shipped to the Whitehorse Assay Office, Whitehorse, Yukon for analysis. In addition, 3 soil samples were taken from a trench blasted on MTR 11.

The analytical procedure employed is as follows:

Geochemical samples are dried at  $80^{\circ}\text{C}$  for a period of 12 to 24 hours and the dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. A one gram portion of the sample is weighed into a calibrated test tube and digested using hot 70%  $\text{HClO}_4$  and concentrated  $\text{HNO}_3$ . Sample volume is adjusted to 25 mls. using demineralized water. The solutions are homogenized and allowed to settle and then analyzed by atomic absorption procedures.



SCALE 1"=100'



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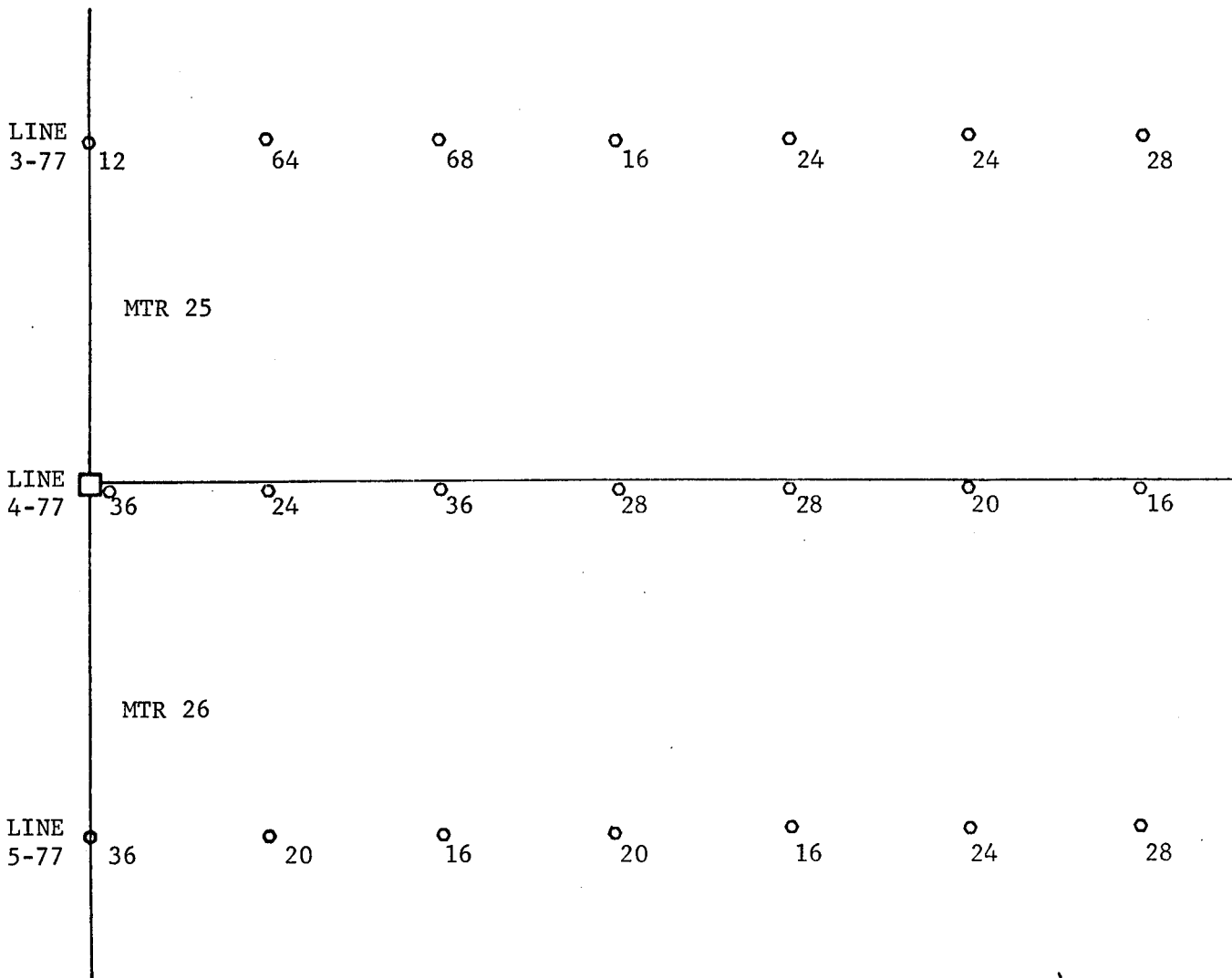
GEOCHEMICAL PLAN - URANIUM (PPM)

Detail, Southwest Anomaly Area

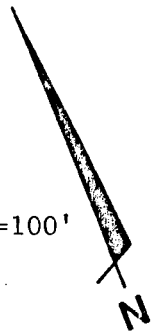
MTR CLAIMS  
 Mayo Mining District  
 Yukon

January, 1978

Fig. 4



SCALE 1"=100'



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GEOCHEMICAL PLAN - COPPER (PPM)

Detail, Southwest Anomaly Area

MTR CLAIMS  
 Mayo Mining District  
 Yukon

January, 1978

Fig. 5

LINE 3-77 36 36 34 37 22 18 21

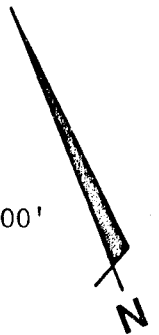
MTR 25

LINE 4-77 13 30 20 10 12 18 19

MTR 26

LINE 5-77 17 28 18 16 14 15 19

SCALE 1"=100'



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SCINTILLOMETER PLAN (CPS)

Detail, Southwest Anomaly Area

MTR CLAIMS  
Mayo Mining District  
Yukon

Results are given in PPM Uranium and Copper and are plotted directly on the accompanying maps (Figs. 4 & 5).

Figure 4 shows uranium values ranging between 0.4 and 31.0 ppm with a threshold of about 10 ppm. This yields 3 anomalous samples of 15.1, 18.4, and 31.0 ppm. These samples however contained a significant amount of organic material which can act as a concentrator of uranium ions.

Figure 5 illustrates a range of copper values in soil of between 12 and 68 ppm with a threshold of about 36 ppm. This yields two anomalous values of 64 and 68 ppm coincident with the highest uranium values respectively.

Three soil samples taken from the trench on MTR 11 gave below threshold values (8.1, 8.0, 0.8 ppm) for uranium and anomalous values (140, 132, 52 ppm) for copper, in both cases relative to the suite of 21 samples discussed above.

#### 4.0 GEOPHYSICAL OBSERVATIONS

Radiometric surveying, using two hand-held Scintrex Model BGS-1S Scintillation Counters, was carried out concurrent with geological traversing. Results were background only with readings ranging up to 60 counts per second. Averages of radiometric readings over outcrop areas are plotted on Fig. 3.

Concurrent with detailed geochemical soil sampling (Section 3.0) radiometric readings were taken at soil sample sites. Results are plotted on Fig. 6. Values range from 10 to 58 cps, none exceeding background.

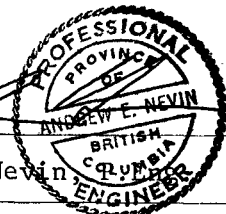
#### 5.0 CONCLUSIONS AND RECOMMENDATIONS

Nowhere on the claims was there observed evidence of the breccia bodies, or their commonly attendant veining and alteration zones, which can be the locus for copper and uranium mineralization in the area. The detailed soil geochemical survey over a previously located anomalous zone did not prove conclusive as the sparse anomalous copper and uranium values occurred in soil samples contaminated with organic material. Ground radiometric readings did not exceed background.

In light of these equivocal results no further work is recommended for the property.

T.L. Sadlier-Brown

Andrew E. Nevin





## APPENDIX 'A'

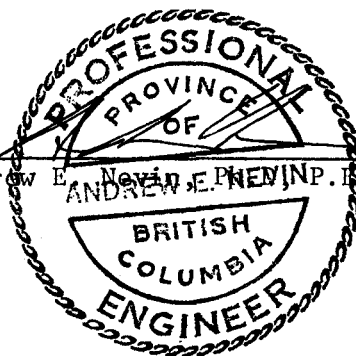
Statement of Qualifications

I, Andrew E. Nevin, hereby state that:

1. My residence address is 926 Montroyal Blvd., North Vancouver, B.C., my office address is 5th floor - 134 Abbott Street, Vancouver, B.C. V6B 2K4; and that I am a Geologist by occupation.
2. I hold a B.Sc. in Geophysics from St. Lawrence University, an M.A. in Geology from University of California, Berkeley, and a Ph.D in Geology from University of Idaho. I have been practicing my profession since 1961, and I am a member of the Association of Professional Engineers (Geological) of the Province of British Columbia, and a Registered Professional Geologist in the State of Idaho.
3. I examined the MTR claim group and carried out the program described herein between September 1 and September 5, 1977.
4. I hold no direct or indirect beneficial interest in the above property nor in the securities of New Minex Resources Ltd., nor do I expect to receive such.

Andrew E. Nevin, P.Eng.  
ANDREW E. NEVIN, P. Eng.

January 25, 1978



Appendix 'B'

Statement of Costs

I, Andrew E. Nevin of 503 - 134 Abbott St., Vancouver, B.C. hereby declare that the following is a true statement of costs directly incurred during the course of the work described herein, on the MTR Claims, Mayo Mining Division, Yukon.

Wages & Consultant fees:	A.E. Nevin . . . . .	\$1,650.00
	Pamicon Development . . . . .	350.00
Aircraft Charter . . . . .		186.00
Meals, accommodation & vehicle rental, supplies . . . . .		931.11
Explosives . . . . .		206.92
Geochemical Analysis . . . . .		84.00
Gas & Oil . . . . .		67.99
		<u>\$3,476.02</u>



January 25, 1978