



42A03NW0028 2.6246 FRIPP

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SUMMARY OF  
EXPLORATION ACTIVITIES  
IN FRIPP TWP.

(BORDIN OPTION)

RECEIVED

JAN 4 1984

MINING LANDS SECTION

*Quail* 2.4971

R.A. ZINN, B.Sc.

2.6246 *urg*

1.

## SUMMARY

During October of 1983, Northgate Exploration Personnel completed a VLF Survey over 12 of Dennis Bordin's claims in Fripp Twp. The survey was facilitated by using our Timmins office as a base.

4 conductors were located, the largest of which cross cuts a magnetic feature outlined by the 1982 work on the property. This cross cutting feature should be investigated in more detail.

2.0

## INTRODUCTION

This report covers the exploration activities of Northgate Exploration on the 12 claims in south Fripp Twp. that were returned to D. Bordin in addition to the main block of claims as per the termination of our agreement with him. A V.L.F. E.M. 16 survey was performed on the pre-existing grid during October, 1983.

3.0

## LOCATION (NTS Ref 42 A/3)

The 12 claim extension is located in the southeast quadrant of Fripp Township approximately 20 miles south of Timmins and adjoins the main claim block on claims 618993, 618996 and 618999. (Figure 1)

4.0

## ACCESS

Fripp Township is accessible via a network of well maintained gravel roads. The system links Matchewan, Shining Tree and Timmins (Pine Street). The main claim block is covered by numerous non maintained logging roads which could only be used by snowmobile during the winter. Access to the southwest extension is via an old logging road to the north end of Bartlett Lake or to the east side of claim 624096.

5.0

## PHYSICAL FEATURES

5.1

### Topography

Price, Fripp and McArthur Townships are characterized by isolated, low, rocky hills, unconsolidated glacial deposits and poorly drained swamps. Rarely does the local relief exceed one hundred feet in elevation which is typical of the Precambrian Peneplain.

Lakes in the general area are shallow and are usually the result of beaver dams. Many are intermittent and tend to evaporate during the summer months.

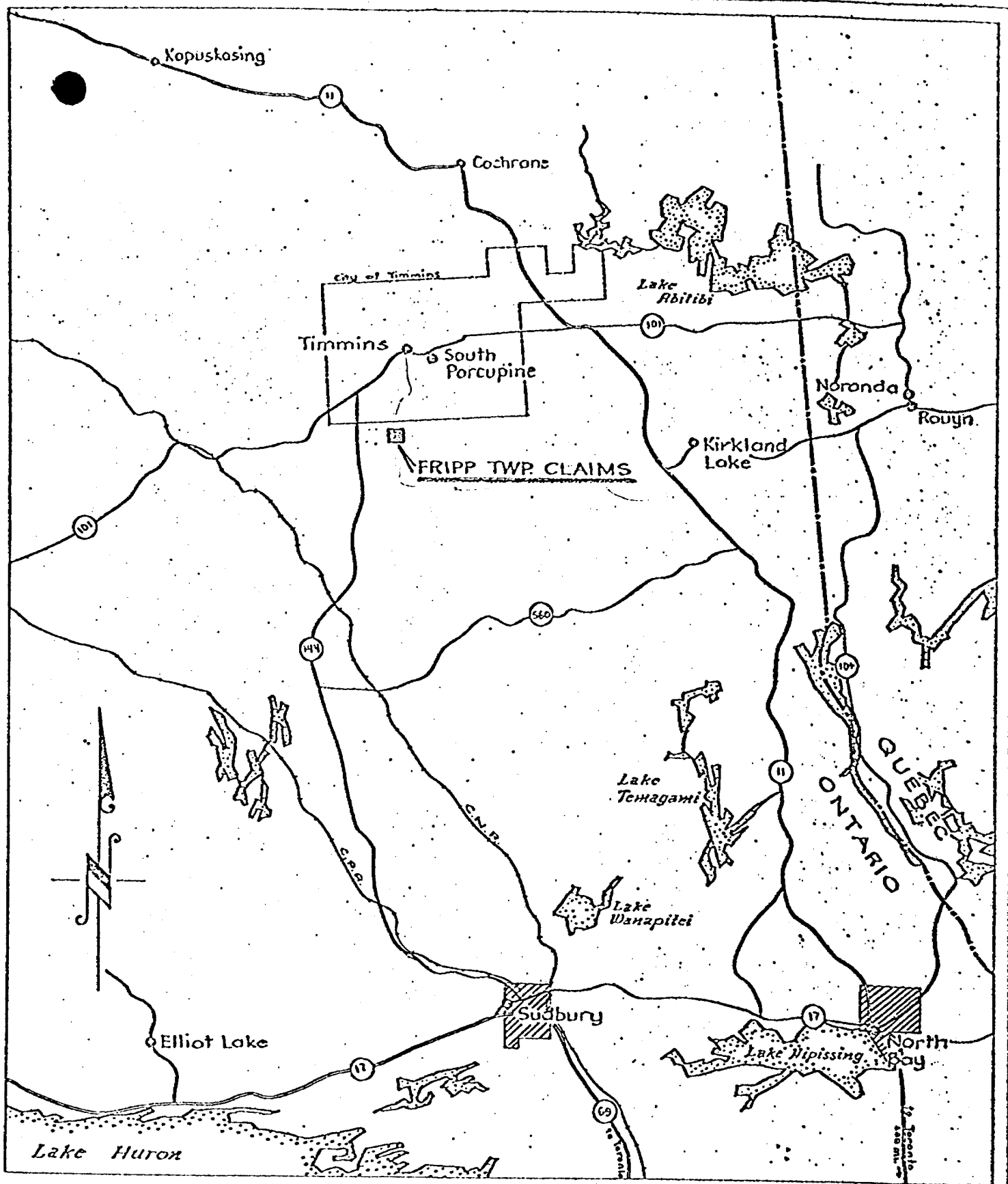


Figure 1  
 LOCATION MAP  
 showing  
 FRIPP TWP. CLAIMS

10 0 10 20 30 40 50  
 MILES

## 5.0 PHYSICAL FEATURES (Cont'd.)

### 5.2 Timber

Forest cover in this area is relatively mature with stands of poplar, birch, spruce and pine, being common on the higher ground. The lower swampy areas are covered with alder, saplings, moose maple and in some areas, mature cedar.

Although large scale harvesting does occur elsewhere in the area, only small cleared areas exist on the property due to selective cutting.

### 5.3 Water Resources

The Split Rock River system which transects the property at its mid-point is of sufficient size and flow to provide an adequate water source for both pre-production and production needs. Katoshaskepeko Lake, as well as, numerous other small lakes could service the northern claims, while ponds and swamps could service the southern claims for diamond drilling or other pre-production activities.

### 5.4 Climate

The Timmins area has a continental climatic pattern which is characterized by dry, cold winters and hot, humid summers.

Winter, which can begin as early as mid-October and continue until mid-May, experiences temperatures as low as  $-40^{\circ}\text{C}$  over extended periods and snow cover to 5 feet in forested areas.

The summer months on the other hand, have warm to hot temperatures which are sometimes accompanied by uncomfortable humidity.

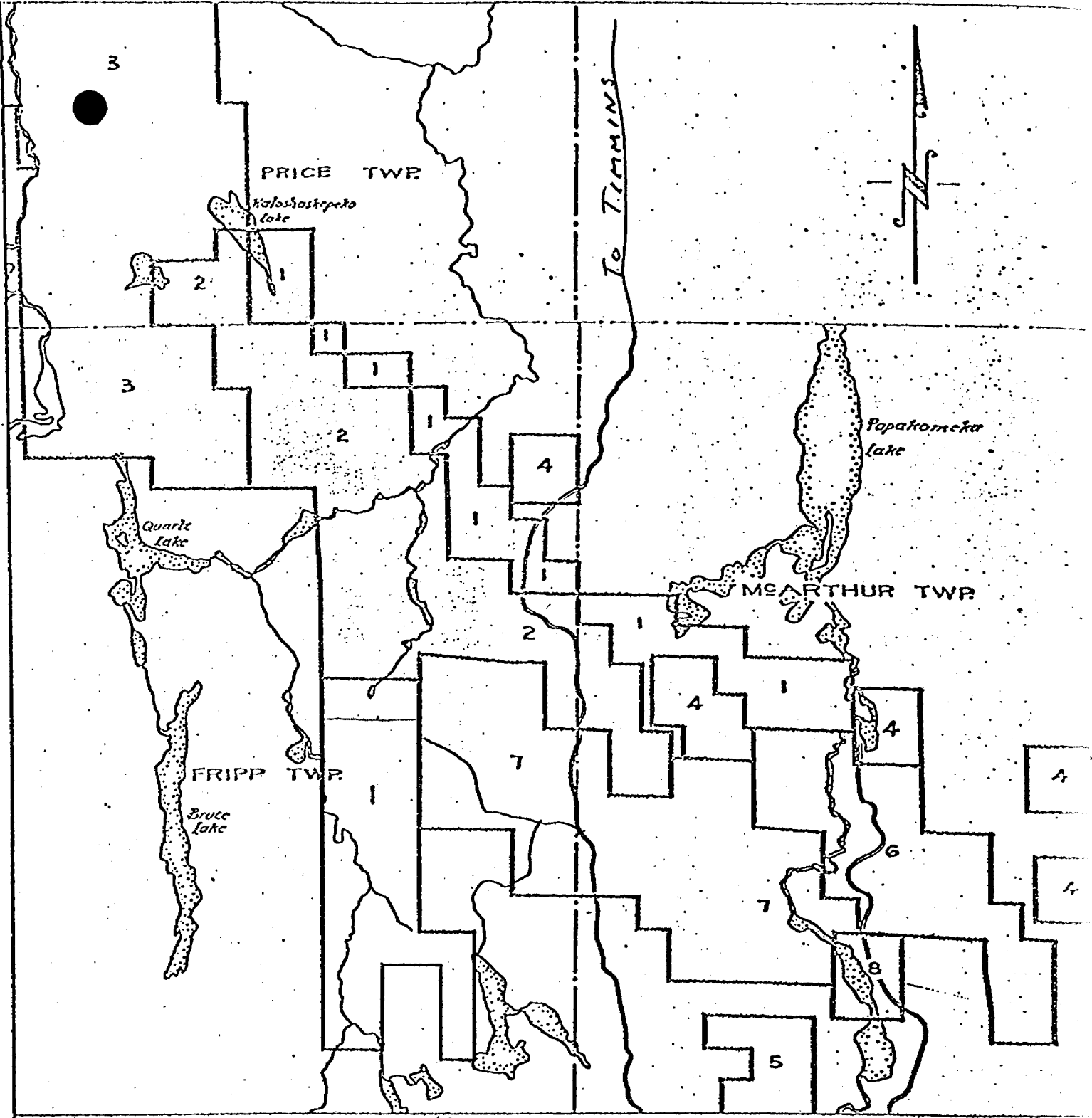
Both spring and fall months have pleasant sunny days, but cool nights. These seasons, however, can be marred by freezing temperatures, frost and snow.

## 6.0 AUXILLIARY SERVICES

### 6.1 Power Facilities

With no major industries in the area, an immediate source of electrical power is not available. However, with the installation of a substation, an adequate supply can be obtained from the power line located four miles to the east.

This line runs south from Abitibi Canyon to Sudbury and supplies Timmins with most of its electrical needs. The capacity of the line is now 500,000 volts.



LEGEND

- 1 Northgate Exploration Limited
- 2 Bordin-Northgate Option
- 3 Argentex
- 4 Amax
- 5 Texas Gulf
- 6 Westfield Minerals
- 7 Mattogami Lake Mines Ltd
- 8 Lacana

Figure 2  
FRIPP TOWNSHIP AREA

COMPANY HOLDINGS

Scale: 1" = 1 mile

## 6.0 AUXILLIARY SERVICES (Cont'd.)

### 6.2 Mining Equipment and Supplies, Labour

Timmins is a well established mining centre with many suppliers maintaining warehouses in the district.

Likewise, mining contractors and experienced miners are available in the district.

## 7.0 PROPERTY AND OWNERSHIP

Northgate Exploration Limited transferred the claim ownership to Mr. Dennis Bordin upon termination of its option agreement. The 12 claims are numbered 622291 to 94 inclusive, 622582 and 624096-102 inclusive.

## 8.0 PROPERTY HISTORY

Northgate Exploration Limited completed a magnetometer survey in June of 1982. No evidence of prior work on these claims was found.

## 9.0 GEOLOGY

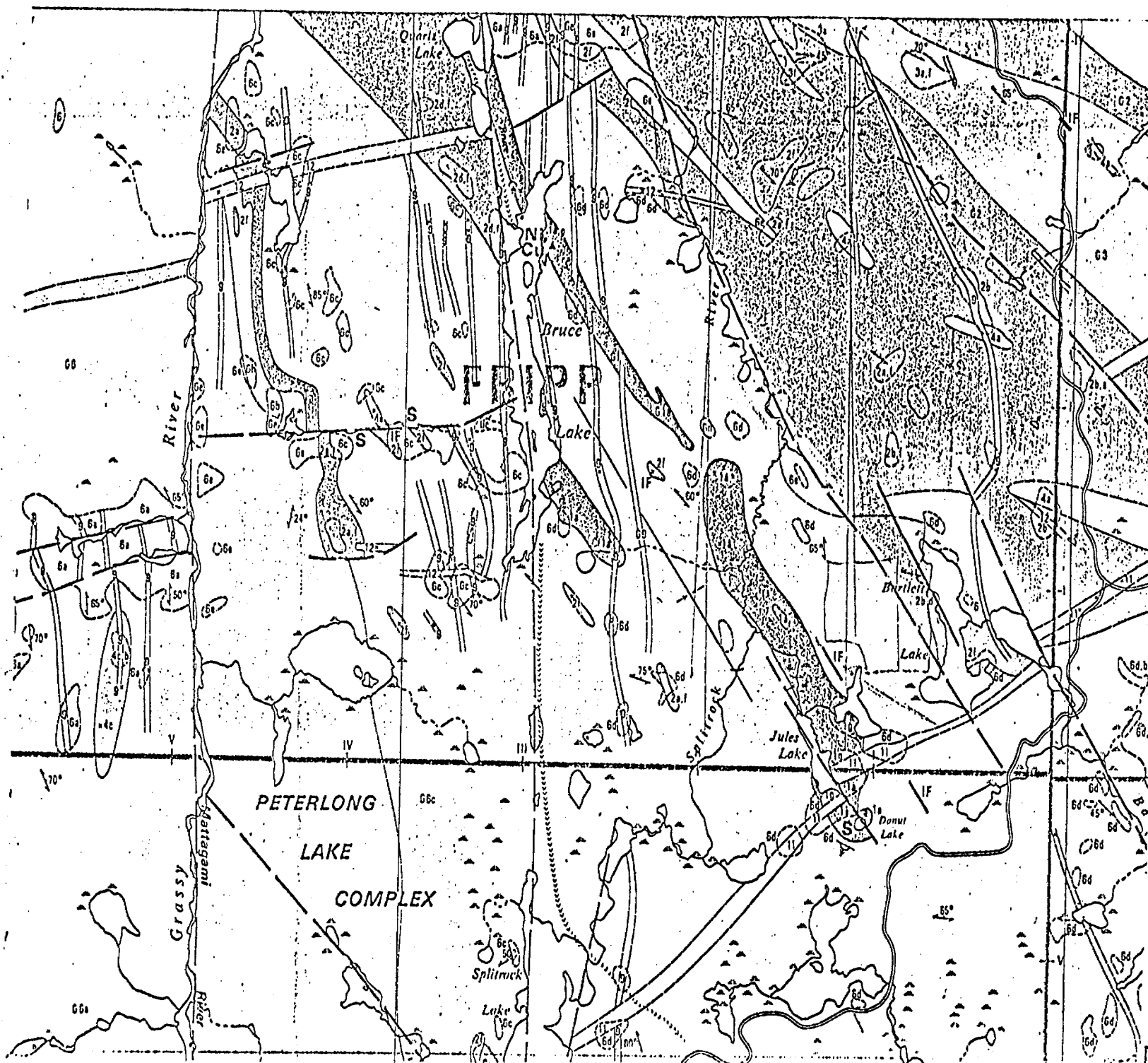
### 9.1 Regional (Figure 3)

All of the rocks which underlie this area are of early Precambrian Age (Archaean) and have been capped by a mantle of Pleistocene and recent unconsolidated deposits.

The Archaean rocks consist of two cycles of volcanism in which each cycle contains a basal ultramafic sequence of flows. Mafic metavolcanics overlie this unit and generally contain massive, as well as, pillowed flows. These in turn are overlain by an upper unit of intermediate to felsic metavolcanics consisting of massive flows, but more commonly tuffs, lapilli tuffs and breccia. It is within this upper unit that intercalated sedimentary beds occur including siltstones, greywackes and iron formation.

The lower metavolcanic unit has been intruded by both felsic and mafic magmas which have formed small domes of quartz-feldspar porphyry in the felsic volcanics and gabbroic sills in the mafic volcanics, respectively.

A pre-tectonic age has been affixed to the gabbro while the porphyry is syntectonic and may be part of a feeder system for the felsic rocks.



UNCONFORMITY  
**PRECAMBRIAN**  
 LATE PRECAMBRIAN  
 MAFIC INTRUSIVE ROCKS\*

12 12 Olivine diabase.

UNCONFORMITY  
**EARLY PRECAMBRIAN (ARCHEAN)**  
 MAFIC INTRUSIVE ROCKS

9 9 Diabase.

BATHOLITHIC COMPLEXES  
 PETERLONG LAKE COMPLEX

5 5  
 6 Unsubdivided.  
 6a Hornblende-biotite trondhjemite.  
 6b Biotite-hornblende trondhjemite.  
 6c Diorite.  
 6d Diorite and quartz diorite containing trace to 20 percent blue opaline quartz.  
 6e Biotite granodiorite.  
 6f Porphyritic hornblende granodiorite.  
 6g Leucocratic granodiorite and alaskite.  
 6h Fine-grained feldspar and quartz porphyry.

INTRUSIVE CONTACT  
 METAMORPHOSED MAFIC AND  
 ULTRAMAFIC INTRUSIVE ROCKS

4 4 Unsubdivided.  
 4a Gabbro.  
 4b Gabbroic anorthosite.  
 4c Pyroxenite.  
 4d Serpentinized peridotite.  
 4e Peridotite largely altered to talc-carbonate etc.  
 4f Quartz gabbro.

INTRUSIVE CONTACT  
 METAVOLCANICS AND  
 METASEDIMENTS

INTERMEDIATE TO FELSIC  
 METAVOLCANICS

3 3 Unsubdivided.  
 3a Tuff and lapilli-tuff.  
 3b Breccia.  
 3c Massive metavolcanics.  
 3d Pillowed flows.  
 3e Interlayered tuff and lesser massive flows.  
 3f Sericitic schist.  
 3g Minor interlayered siltstone and local conglomerate greywacke.  
 3h Garnet and staurolite bearing metavolcanics.

MAFIC METAVOLCANICS

2 2 Unsubdivided.  
 2a Massive flows.  
 2b Pillowed flows.  
 2c Varfolitic flows.  
 2d Tuff and lapilli-tuff.  
 2e Volcanic breccia.  
 2f Amphibolitized.  
 2g Gneissic.  
 2h Pyroxene spinifex.  
 2j Chlorite schist.  
 2k Tremolitic (Low Fe)-bearing mafic metavolcanics.

ULTRAMAFIC METAVOLCANICS

1 1 Unsubdivided.  
 1a Massive, polysulfured serpentinized peridotite.  
 1b Spinifex textured flows.  
 1c Irregularly shaped and vein-like spinifex.

## GEOLOGY

### 9.1 Regional (Figure 3) (Con't.)

Large emplacements of granite magma late in the tectonic cycle, formed the Adams Batholith and the poly-phase Peterlong Lake complex.

Numberous diabase dykes transect the area and are middle to late Precambrian in age.

The Archaean volcano-desimentary series has been compressed and warped about the granitic domes in Adam and Giekie Townships. The Bordin-Northgate property lies on the western flank of this structure.

Numerous north to northwesterly faults traverse or follow the trend of the disturbed and enfolded volcanic inliers.

### 10.0 E.M. 16 V.L.F. SURVEY

The VLF Survey was performed on the pre-existing grid (400' line spacing 100' stations) from 1982. Four distinct parallel conductors were identified.

Conductor A runs from line 44S at the base line to line 0/2000W. This conductor is narrow and well defined with a vertical to steep easterly dip. A magnetic anomaly from line 24S/BL to line 8S/2000W is cut by the conductor at about 20°. One of the sharpest crossovers occurs on the north edge of the magnetic anomaly.

Conductor B runs from line 40S/1100W to Line 16S/2100W, this is a weak bedrock conductor parallel to conductor A.

Conductors C, C1 and D are masked by conductive overburden in the river bed.

### 11.0 RECOMMENDATIONS

Conductor A should be further tested by Geochemistry and Mapping especially in the vicinity of the E.M. - MAG. intersection. If those results are positive the anomaly should be drilled.

At this point in time the other conductors do not warrent further investigation.



## C E R T I F I C A T E

I Ronald Allan Zinn hereby declare that:

1. I am a graduate of the University of Waterloo in 1978 with a B.Sc. (Earth Sciences)
2. I reside at 715 Don Mills Road, Apt. 202, Don Mills, Ontario
3. I have practiced Geology since graduation, first with Essex Minerals Ltd. until November, 1978, then with M.P.H. Consulting Ltd. until October 1980, and since then with Northgate Exploration Limited.
4. I have worked in Alaska, British Columbia, Saskatchewan, Manitoba, Ontario, Quebec and Greenland.
5. I am a member in good standing of the Geological Association of Canada and of the Prospectors and Developers Association.

*Ron Zinn*

R.A. Zinn, B.Sc. :



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R.A. ZINN, B.Sc.

2.6246.org

## 1.0 SUMMARY

During October of 1983, Northgate Exploration Personnel completed Geological Mapping, Geochemical Sampling and V.L.F. E.M. surveys over its 27 claim group in Fripp Twp.

The V.L.F. and Geochemical Surveys were somewhat inconclusive due to topographic masking. The mapping, however, even with sparse outcrop, confirms suspected contacts and rock types inferred by the prior magnetometer survey and the accompanying surveys.

The next step is to perform a low frequency horizontal loop E.M. survey to penetrate the effects of the overlying conductive clays. Conductors to the northeast (ie, base) of the ultra mafic volcanics should be drilled to test for sulphide mineralization similar to that on the Hollinger-Argus property to the southeast.

## 1.1 Introduction

This report covers the 1983 Exploration activities of Northgate Exploration Limited on its 27 claim group in south Fripp Twp. The target is a copper massive sulphide deposit similar to that of Hollinger-Argus immediately to the southeast.

Operations were carried out from our Field Office in Timmins during October and November of 1983.

## 2.0 LOCATION (N.T.S. Ref. 42A/3) Figure 1

This 27 claim group is located in the southeast quadrant of Fripp Twp. approximately 20 miles south of Timmins and immediately northwest of Bartlett Lake.

## 3.0 ACCESS

Fripp Township is accessible via a network of well maintained gravel roads. The system links Matchewan, Shining Tree and Timmins (Pine Street). The main claim block is covered by numerous non maintained logging roads which could only be used by snowmobile during the winter. Bartlett Lake itself, can be used to reach the eastern 4 claims by boat or skidoo. (Figure 2)

## 4.0 PHYSICAL FEATURES

### 4.1 Topography

Price, Fripp and McArthur Townships are characterized by isolated, low, rocky hills, unconsolidated glacial deposits and poorly drained swamps. Rarely does the local relief exceed one hundred feet in elevation which is typical of the Precambrian Peneplain.

Lakes in the general area are shallow and are usually the result of beaver dams. Many are intermittent and tend to evaporate during the summer months.

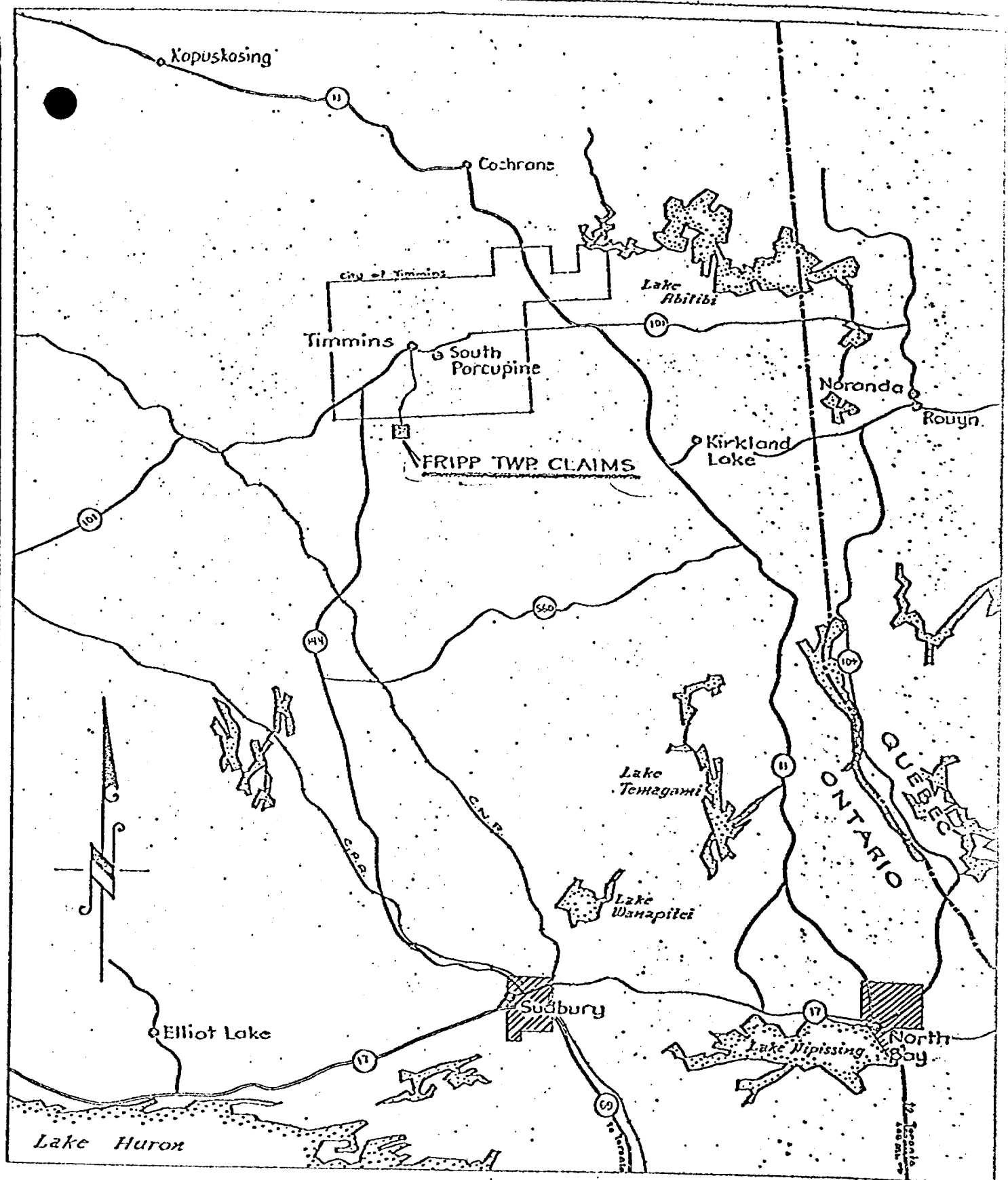
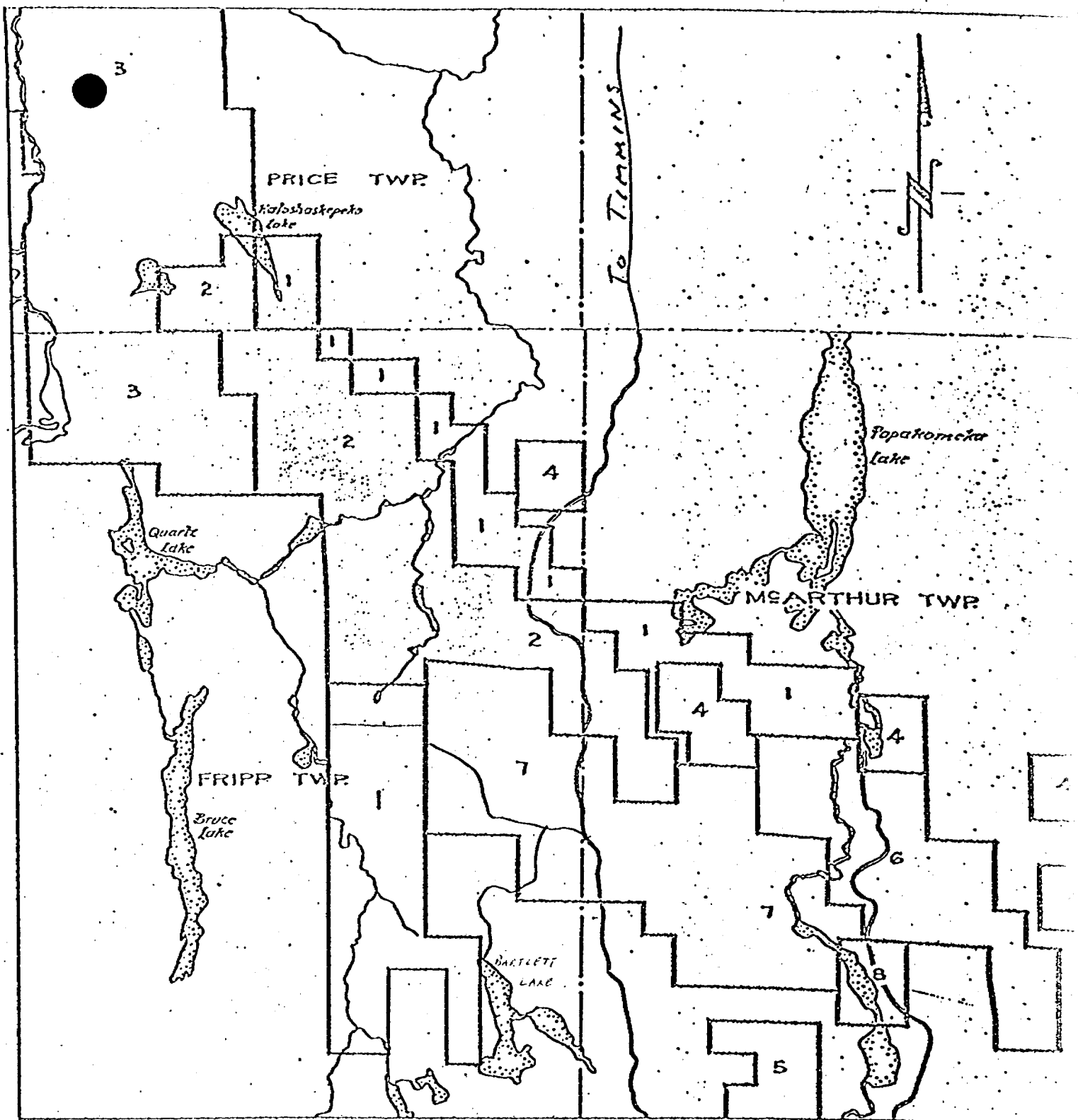


Figure 1

LOCATION MAP  
 showing  
 FRIPP TWP. CLAIMS





LEGEND

- 1 Northgate Exploration Limited
- 2 Bordin-Northgate Option
- 3 Argentex
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Figure 2  
FRIPP TOWNSHIP AREA

COMPANY HOLDINGS

Scale: 1" = 1 mile

#### 4.2 Timber

Forest cover in this area is relatively mature with stands of poplar, birch, spruce and pine, being common on the higher ground. The lower swampy areas are covered with alder, saplings, moose maple and in some areas, mature cedar.

#### 4.3 Water Resources

The Split Rock River system which transects the property is of sufficient size and flow to provide an adequate water source for both pre-production and production needs.

#### 4.4 Climate

The Timmins area has a continental climatic pattern which is characterized by dry, cold winters and hot, humid summers.

Winter, which can begin as early as mid-October and continue until mid-May, experiences temperatures as low as  $-40^{\circ}\text{C}$  over extended periods and snow cover to 5 feet in forested areas.

The summer months on the other hand, have warm to hot temperatures which are sometimes accompanied by uncomfortable humidity.

Both spring and fall months have pleasant sunny days, but cool nights. These seasons, however, can be marred by freezing temperatures, frost and snow.

### 5.0 AUXILLIARY SERVICES

#### 5.1 Power Facilities

With no major industries in the area, an immediate source of electrical power is not available. However, with the installation of a substation, an adequate supply can be obtained from the power line located four miles to the east.

This line runs south from Abitibi Canyon to Sudbury and supplies Timmins with most of its electrical needs. The capacity of the line is now 500,000 volts.

#### 5.2 Mining Equipment and Supplies, Labour

Timmins is a well established mining centre with many suppliers maintaining warehouses in the district.

Likewise, mining contractors and experienced miners are available in the district.

## 6.0 PROPERTY AND OWNERSHIP (Table 1)

The 27 claim group is wholly owned by Northgate Exploration Limited. These claims were originally part of phase two of Fripp Option Agreement with Dennis Bordin. When this option was terminated all claims within 1 mile of the originals were transferred to Bordin as well.

The Fripp Option property as originally presented, consisted of a block of 74 unpatented mining claims, distributed in Price, Fripp, and McArthur Townships. All claims were staked by Dennis Bordin of Timmins in the spring of 1981 and were in good standing.

Northgate exploration Limited expanded this group in two phases, by staking an additional 75 claims. The first phase protected the blocks' eastern boundary and to form one contiguous group with Westfield's claims in McArthur Township. The second phase extended part of the boundary southwards in Fripp Township to adjoin and partially surround five leased claims currently held by Hollinger-Argus, and containing a mineral deposit of approximately 165,000 tons averaging 3% copper.

## 7.0 PROPERTY HISTORY

Other than the Hollinger-Argus deposit there is no work on file concerning these claims. Also no evidence of prior work was observed while performing our surveys.

## 8.0 GEOLOGY

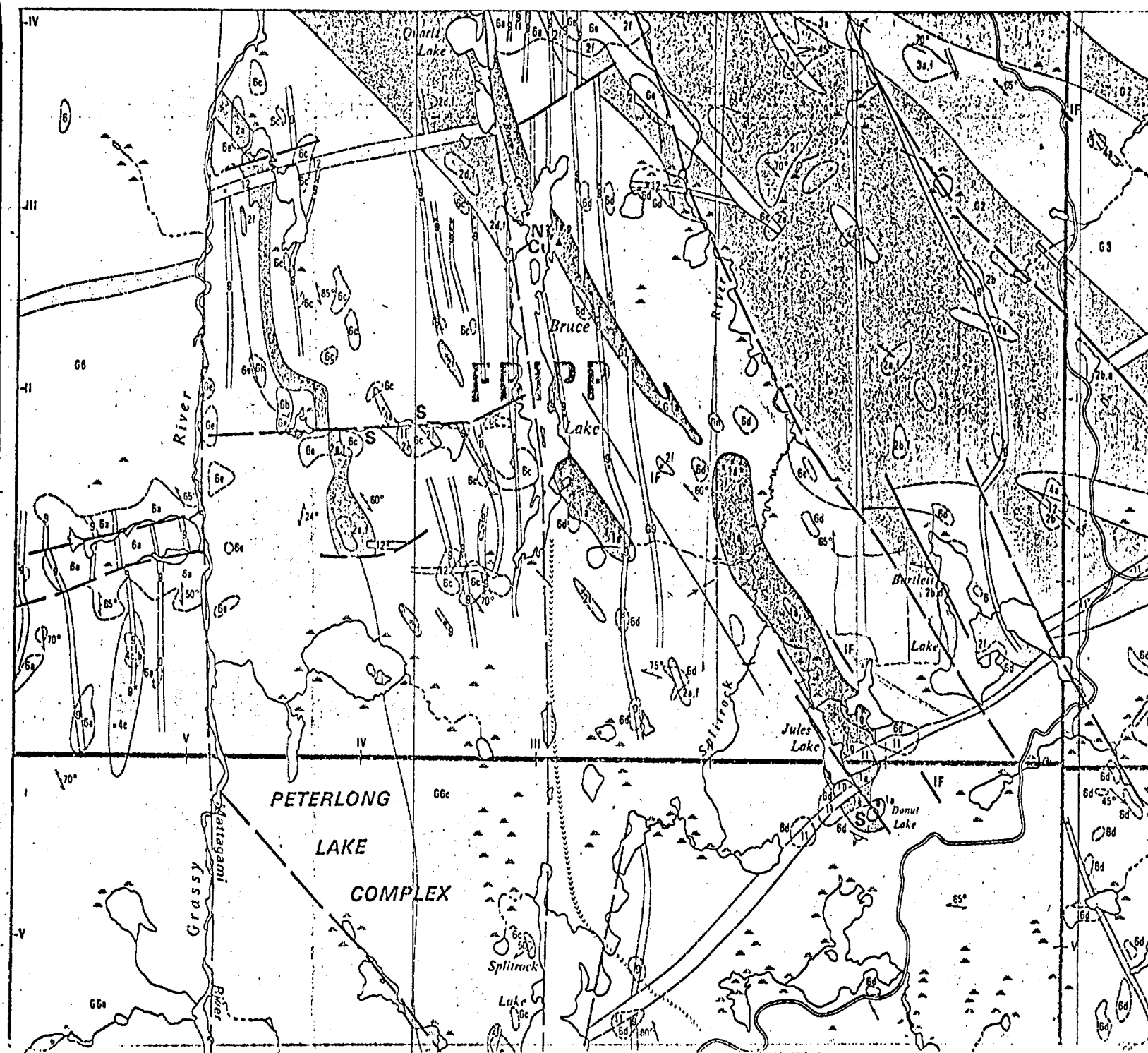
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All of the rocks which underlie this area are of early Precambrian Age (Archaean) and have been capped by a mantle of Pleistocene and Recent unconsolidated deposits.

The Archaean rocks consist of two cycles of volcanism in which each cycle contains a basal ultramafic sequence of flows. Mafic metavolcanics overlie this unit and generally contain massive, as well as, pillowed flows. These in turn are overlain by an upper unit of intermediate to felsic metavolcanics consisting of massive flows, but more commonly tuffs, lapilli tuffs and breccia. It is within this upper unit that intercalated sedimentary beds occur including siltstones, greywackes and iron formation.

The lower metavolcanic unit has been intruded by both felsic and mafic magmas which have formed small domes of quartz-feldspar porphyry in the felsic volcanics and gabbroic sills in the mafic volcanics, respectively.

A pre-tectonic age has been affixed to the gabbro while the porphyry is syn-tectonic and may be part of a feeder system for the felsic rocks.



- UNCONFORMITY  
**PRECAMBRIAN**  
**LATE PRECAMBRIAN**  
**MAFIC INTRUSIVE ROCKS\***
- 12 12 Olivine diabase
- UNCONFORMITY  
**EARLY PRECAMBRIAN (ARCHEAN)**  
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 6h Fine-grained feldspar and quartz porphyry.
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 3h Garnet and staurolite bearing metavolcanics.
- MAFIC METAVOLCANICS
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 2c Varolitic flows.  
 2d Tuff and lapilli-tuff.  
 2e Volcanic breccia.  
 2f Amphibolitized.  
 2g Gneissic.  
 2h Pyroxene spinifex.  
 2i Chlorite schist.  
 2k Tremolitic (Low Fe)-bearing mafic metavolcanics.
- ULTRAMAFIC METAVOLCANICS
- 1 1 Unsubdivided.  
 1a Massive, poystured serpentinized peridotite.  
 1b Spinifex textured flows  
 1c Irregular patches and veins of spinifex-textured peridotite  
 1d Ultramafic pyroclastics  
 1e Conglomerate

Figure 3



## 8.0 GEOLOGY

### 8.1 Regional (Figure 3) (Cont'd.)

Large emplacements of granite magma late in the tectonic cycle, formed the Adams Batholith and the poly-phase Peterlong Lake complex.

Numerous diabase dykes transect the area and are middle to late Precambrian in age.

The Archaean volcano-sedimentary series has been compressed and warped about the granitic domes in Adam and Giekie Townships. The Bordin-Northgate property lies on the western flank of this structure.

Numerous north to northwesterly faults traverse or follow the trend of the disturbed and enfolded volcanic inliers.

### 8.2 Local (Map in back pocket)

Outcrops on the property are small and scattered. There is less than 5% outcrop exposed.

Only 3 rock types were found on the property they are described as follows:

#### 1. Ultramafic Metavolcanics

The Ultramafic Metavolcanics are periodotites with a granular texture. They are typically fine grained with Euhedral to Subhedral Olivine Crystals. The fresh surface is black-green and weathers orange-brown. Talc-Carbonate and Tremolite alteration is noted in the literature but was not observed on this property. A minor 5-10% amount of Magnetite was found to correlate with the high mag readings.

#### 2. Mafic Metavolcanics

The Mafic Metavolcanics are typically fine grained with occasional coarse grained massive flows. The massive flows exhibit euhedral black-green hornblende, plagioclase, minor epidote and blue quartz. The only appreciable amount of sulphides located were disseminated sulphides with blue quartz found on the shore of Bartlett Lake. This was also the only place blue quartz was found in the volcanics.

#### 3. Diorite - Quartz Diorite

These intrusives belong to the Peterlong Lake Batholith Complex. They are typically medium to coarse grained, consisting of Plagioclase, Hornblende, Quartz and Biotite. No sulphide mineralization was found to be associated with this intrusive.

## 8.2 Local (Map in back pocket) (Cont'd.)

### 3. (Cont'd.)

The volcanics form 2 narrow belts within the diorite stock. Although no contacts were directly observed it would appear that the diorite does not crosscut volcanic stratigraphy. Therefore, the intrusion was emplaced along original bedding planes.

## 9.0 E.M. 16 V.L.F. SURVEY

The V.L.F. survey was unable to locate any definite bedrock conductors. The areas in which they would be expected from the magnetometer and geological surveys are swamp covered as is common in this area. A lower frequency system (horizontal loop E.M.) will be required to see through the surface noise caused by conductive clays.

## 10.0 SOIL GEOCHEMISTRY SURVEY

A total of 446 soil samples was taken. These were analyzed for Cu, Pb, Zn, Ni.

This is somewhat less than optimal as a large portion of the grid is covered by swamp and spruce bog.

The overall results are quite disappointing with very few samples returning results of 20 p.p.m. or higher (# samples  $\geq$  20 p.p.m. = 51, Zn 42, Ni 15, Cu 11, Pb 4). The highest result was 131 p.p.m. Ni over the ultramafic volcanics.

The topography presents a real problem in utilizing geochem techniques in that the E.M. anomalies and magnetic anomalies are associated with swamps and spruce bog. Soil samples are impossible to obtain using manual methods.

It should however be noted that the results cannot be considered negative as the topography discourages any extension of a geochemical halo perpendicular to the strike of the geology.

## C E R T I F I C A T E

I Ronald Allan Zinn hereby declare that:

1. I am a graduate of the University of Waterloo in 1978 with a B.Sc. (Earth Sciences)
2. I reside at 715 Don Mills Road, Apt. 202, Don Mills, Ontario
3. I have practiced Geology since graduation, first with Essex Minerals Ltd. until November, 1978, then with M.P.H. Consulting Ltd. until October 1980, and since then with Northgate Exploration Limited.
4. I have worked in Alaska, British Columbia, Saskatchewan, Manitoba, Ontario, Quebec and Greenland.
5. I am a member in good standing of the Geological Association of Canada and of the Prospectors and Developers Association.

*Ron Zinn*

R.A. Zinn, B.Sc.



GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 1508 Number of Readings 1508
Station interval 100' Line spacing 400'
Profile scale 1 cm = 40%
Contour interval N/A

MAGNETIC

Instrument
Accuracy - Scale constant
Diurnal correction method
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

Instrument VLF GEONICS EM16
Coil configuration HORIZONTAL LOOP
Coil separation AS PER GRID
Accuracy +/- 1%
Method: [X] Fixed transmitter [ ] Shoot back [ ] In line [ ] Parallel line
Frequency 17.8KHz CUTLER MAINE (specify V.L.F. station)
Parameters measured TILT ANGLE OF POLARIZATION ELLIPSE

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [ ] Time Domain [ ] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode

SELF POTENTIAL

Instrument \_\_\_\_\_ Range \_\_\_\_\_

Survey Method \_\_\_\_\_

Corrections made \_\_\_\_\_

RADIOMETRIC

Instrument \_\_\_\_\_

Values measured \_\_\_\_\_

Energy windows (levels) \_\_\_\_\_

Height of instrument \_\_\_\_\_ Background Count \_\_\_\_\_

Size of detector \_\_\_\_\_

Overburden \_\_\_\_\_

(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey \_\_\_\_\_

Instrument \_\_\_\_\_

Accuracy \_\_\_\_\_

Parameters measured \_\_\_\_\_

Additional information (for understanding results) \_\_\_\_\_

AIRBORNE SURVEYS

Type of survey(s) \_\_\_\_\_

Instrument(s) \_\_\_\_\_

(specify for each type of survey)

Accuracy \_\_\_\_\_

(specify for each type of survey)

Aircraft used \_\_\_\_\_

Sensor altitude \_\_\_\_\_

Navigation and flight path recovery method \_\_\_\_\_

Aircraft altitude \_\_\_\_\_ Line Spacing \_\_\_\_\_

Miles flown over total area \_\_\_\_\_ Over claims only \_\_\_\_\_

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken 27

Total Number of Samples 446

Type of Sample SOIL  
(Nature of Material)

Average Sample Weight + 10 gm

Method of Collection HAND

Soil Horizon Sampled B

Horizon Development GOOD TO POOR

Sample Depth LESS THAN 1'

Terrain LOW HILLS + SWAMP

Drainage Development GOOD OR POOR

Estimated Range of Overburden Thickness 0 - 60'

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis -80

General \_\_\_\_\_

ANALYTICAL METHODS

Values expressed in: per cent   
p. p. m.   
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, (circle)

Others \_\_\_\_\_

Field Analysis (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Field Laboratory Analysis

No. (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Commercial Laboratory (446 tests)

Name of Laboratory BONDAR-CLEGG

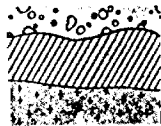
Extraction Method HNO<sub>3</sub>-HCl

Analytical Method AA

Reagents Used \_\_\_\_\_

General \_\_\_\_\_

Bondar-Clegg & Company Ltd.  
764 Belfast Road  
Ottawa, Ontario  
Canada K1G 0Z5  
Phone: (613) 237-3111  
Telex: 053-4455



**BONDAR-CLEGG**

Geotechnical  
Lab. B.

NORTHGATE EXPLORATION LIMITED  
G. HARPER  
P.O. BOX 143  
18T CAN. PLACE  
TORONTO, ONT. M5X 1C7

Invoice: 105049

Date: December 05, 1983

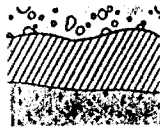
Report No: 013-3549

Project: 785

446 Analyses of Copper	at	1.90	847.40	
446 Analyses of Nickel	at	0.95	423.70	
446 Analyses of Lead	at	0.95	423.70	
446 Analyses of Zinc	at	0.95	423.70	
Subtotal			2118.50	2118.50
Sample Preparation				
446 Samples of DRY, SEIVE -80	at	0.75	334.50	
Subtotal			334.50	334.50
Invoice Total				\$2453.00



Bondar-Clegg & Company Ltd.  
764 Belfast Road  
Ottawa, Ontario  
Canada K1G 0Z5  
Phone: (613) 237-3111  
Telex: 053-4455



**BONDAR-CLEGG**

Geochem  
Lab

NORTHGATE EXPLORATION LIMITED  
B. HARPER  
P.O. BOX 143  
181 CAN. PLACE  
TORONTO, ONT. M5X 1C7

Invoice: 105049  
Date: December 05, 1983  
Report No: 013-3549  
Project: 785

446 Analyses of Copper	at	1.90	847.40	
446 Analyses of Nickel	at	0.95	423.70	
446 Analyses of Lead	at	0.95	423.70	
446 Analyses of Zinc	at	0.95	423.70	
Subtotal			2118.50	2118.50
Sample Preparation				
446 Samples of DRY, SEIVE -80	at	0.75	334.50	
Subtotal			334.50	334.50
Invoice Total				2453.00



# NORTHGATE EXPLORATION LIMITED

0009929

TORONTO, CANADA

December 14 19 83

PAY

750-304 2,079 45  
785-304 2,453 00

\$ 2,002.00

## NORTHGATE EXPLORATION LIMITED

TO THE ORDER OF **Bondar-Clegg & Co. Ltd.**  
764 Belfast Road  
Ottawa, Ontario  
K1G 0Z5

PER Northgate

PER NOT NEGOTIABLE

THE TORONTO-DOMINION BANK  
55 KING ST. W. & BAY ST.  
TORONTO, M5K 1A2 CANADA

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

NORTHGATE EXPLORATION LIMITED - REMITTANCE ADVICE

PLEASE DETACH BEFORE DEPOSITING

	DEBIT			CREDIT		
	AC			AC		
	750-304	2,079	45			
	785-304	2,453	00			

FILE COPY

*Handwritten notes:*  
12/21/83  
750-304



# NORTHGATE EXPLORATION LIMITED

0009929

TORONTO, CANADA

December 14 19 83

PAY

7 1/2 453 24 5/8

\$ 2,802.88

## NORTHGATE EXPLORATION LIMITED

TO THE ORDER OF Bondar-Clegg & Co. Ltd.  
764 Belfast Road  
Ottawa, Ontario  
L 1G1 0Z5

PER *Noel J. Allura*

PER *[Signature]*  
NOT NEGOTIABLE

THE TORONTO-DOMINION BANK  
55 KING ST. W. & BAY ST.  
TORONTO, M5K 1A2 CANADA

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

NORTHGATE EXPLORATION LIMITED - REMITTANCE ADVICE

PLEASE DETACH BEFORE DEPOSITING

DEBIT			CREDIT		
AC			AC		
750-304	2,079	45			
785-304	2,453	00			

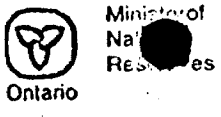
FILE COPY

$$\frac{2453.00}{15} = 163.53$$

$$\frac{163.53}{27} = 6.06$$

750-304

Mar. 13<sup>th</sup>



Report of Work  
(Geophysical, Geological,  
Geochemical and Expenditures)

#40/84



900

The Mining Act

DO NOT USE shaded areas below.

Type of Survey(s) <b>GEOLOGY GEOCHEM VLF EM SURVEY</b>	Township or Area <b>FRIPP</b>
Claim Holder(s) <b>NORTHGATE EXPLORATION LIMITED</b>	Prospector's Licence No. <b>T835</b>
Address <b>P.O. BOX 143, 1 FIRST CANADIAN PL., STE. 3140, TORONTO, ONTARIO M5X 1C7</b>	
Survey Company <b>NORTHGATE EXPLORATION LIMITED</b>	Date of Survey (from & to) 27 Day   10 Mo.   83 Yr.   15 Day   11 Mo.   83 Yr.
Total Miles of line Cut <b>NIL</b>	
Name and Address of Author (of Geo-Technical report) <b>R. A. ZINN, c/o NORTHGATE EXPLORATION LTD., P.O. BOX 143, 1 FIRST CDN. PL., STE. 3140, TORONTO, ONTARIO</b>	

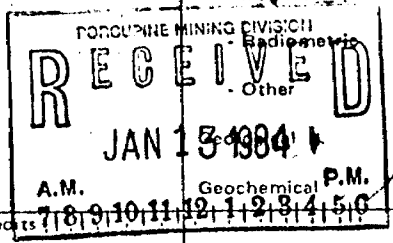
Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	<del>20</del>
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	<del>20</del>
	Geochemical	<del>20</del>
Men Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Other	
	Radiometric	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Prefix	Mining Claim Number	Expend. Days Cr.
P	624103	6
	624104	6
	624105	6
	624106	6
	624107	6
	624108	6
	624109	6
	624110	6
	624111	6
	624112	6
	624113	6
	624293	6
	624294	6
	624295	6
	624296	6
	624297	6
	624298	6
	624299	6
	624303	6
	624304	6
	628036	6
	628037	6
	628041	6

Prefix	Mining Claim Number	Expend. Days Cr.
P	628042	6
	628043	6
	628044	6
	628045	6
	PLEASE ADD EXPENDITURES DAYS TO PREVIOUSLY SUBMITTED REPORT OF WORK	
	RECORDED	
	JAN 13 1984	
	MAR 15 1984	



Expenditures (excludes power stripping)

Type of Work Performed **SECT 77-19 (Assaying)**

Performed on Claim(s) **SEE TRAVERSED LIST**

Calculation of Expenditure Days Credits

Total Expenditures **\$2453.00** ÷ 15 = **163.53** Total Days Credits

Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date **11/11/83** Recorded Holder or Agent (Signature) **R. Zinn**

For Office Use Only

Total Days Cr. Recorded **162** Date Recorded **Jan 13/84** Mining Recorder **[Signature]**

Date Approved as Recorded **84.6.8** Branch Recorder **[Signature]**

Certification Verifying Report of Work: I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying **04/01/84 R. Zinn**



**Report of Work**  
(Geophysical, Geological,  
Geochemical and Expenditures)

# 366/93

Instructions: - Please type or print.  
- If number of mining claims traversed exceeds space on this form, attach a list.  
Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
Do not use shaded areas below.

Jan 21 84

The Mining Act

Type of Survey(s) <b>VLF EM 16 SURVEY</b>		Township or Area <b>FRIPP</b>	
Claim Holder(s) <b>DENIS A. BORDIN</b>		Prospector's Licence No. <b>M20711</b>	
Address <b>40 JUBILEE ST. EAST, APT. 14, TIMMINS, ONTARIO P4N 5W3</b>			
Survey Company <b>NORTHGATE EXPLORATION LIMITED</b>		Date of Survey (from & to) 27   10   83   15   11   83 Day   Mo.   Yr.   Day   Mo.   Yr.	Total Miles of line Cut <b>NIL</b>
Name and Address of Author (of Geo-Technical report) <b>R. A. ZINN, c/o NORTHGATE EXPLORATION LTD., P.O. BOX 143, 1 FIRST CANADIAN PL., STE. 3140 TORONTO, ONTARIO M5X 1C7</b>			

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	20
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	
Electromagnetic	
Magnetometer	
Radiometric	

Mining Claims Traversed (List in numerical sequence)

Prefix	Mining Claim Number	Expend. Days Cr.
P	622291	
	622292	
	622293	
	622294	
	622582,	
	624096	
	624097	
	624098	
	624099	
	624100	
	624101	
	624102,	

**RECEIVED**  
MINING LANDS SECTION

Expenditures (excludes power, staking, etc.)

Type of Work Performed	Performed on Claim(s)
Calculation of Expenditures & Credits	Total Days Credits
Total Expenditures \$	÷ 15 =

**RECEIVED**  
NOV 22 1983  
A.M. 9 10 11 12 1 2 3 4 5 6  
P.M.

For Office Use Only

Total Days Cr. Recorded 240	Date Recorded Nov 22/83	Mining Records
	Date Approved as Recorded 84.6.27	Branch Director

Total number of mining claims covered by this report of work. **12**

Instructions  
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date 16/11/83	Recorded Holder or Agent (Signature) R. Zinn
------------------	---

Certification Verifying Report of Work  
I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying Ronald A. Zinn, 202-715 Don Mills Rd., Don Mills, Ontario M3C 1S4
---

Date Certified 16/11/83	Certified by (Signature) R. Zinn
----------------------------	-------------------------------------



**Report of Work**  
(Geophysical, Geological,  
Geochemical and Expenditures)

# 367/83

- Instructions: - Please type or print.  
- If number of mining claims traversed exceeds space on this form, attach a list.  
Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
- Do not use shaded areas below.

The Mining Act 2.6246

Jan 21st

Type of Survey(s) <b>GEOLOGY GEOCHEM VLF EM SURVEY</b>		Township or Area <b>FRIPP</b>
Claim Holder(s) <b>NORTHGATE EXPLORATION LIMITED</b>		Prospector's Licence No. <b>T835</b>
Address <b>P.O. BOX 143, 1 FIRST CANADIAN PL., STE. 3140, TORONTO, ONTARIO M5X 1C7</b>		
Survey Company <b>NORTHGATE EXPLORATION LIMITED</b>	Date of Survey (from & to) Day   Mo.   Yr.   Day   Mo.   Yr. <b>27   10   83   15   11   83</b>	Total Miles of line Cut <b>NIL</b>
Name and Address of Author (of Geo-Technical report) <b>R. A. ZINN, c/o NORTHGATE EXPLORATION LTD., P.O. BOX 143, 1 FIRST CDN. PL., STE. 3140, TORONTO, ONTARIO</b>		

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	20
	- Magnetometer	
	- Radiometric	
For each additional survey: using the same grid: Enter 20 days (for each)	- Other	
	Geological	20
	Geochemical	20

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	624103		P	628042	
	624104			628043	
	624105			628044	
	624106			628045	
	624107				
	624108				
	624109				
	624110				
	624111				
	624112				
	624113				
	624293				
	624294				
	624295				
	624296				
	624297				
	624298				
	624299				
	624303				
	624304				
	628036				
	628037				
	628041				

RECEIVED  
MINING LANDS SECTION

see reversed statement

Total number of mining claims covered by this report of work. **27**

Expenditures (excludes POWER LINE DIVISION)

Type of Work Performed

Performed on Claim(s)

NOV 22 1983 P.M.

A.M. 7 8 9 10 11 12 1 2 3 4 5 6

Calculation of Expenditure Days Credits

Total Expenditures \$  ÷ 15 = Total Days Credits

Instructions  
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date **16/11/83** Recorded Holder or Agent (Signature) *R. Zinn*

For Office Use Only

Total Days Cr. Recorded **1620** Date Recorded **Nov 22/83** Mining Recorder *[Signature]*

Date Approved as Recorded **16/11/83** Branch Mining Recorder *[Signature]*

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying  
**Ronald A. Zinn, 202-715 Don Mills Rd., Don Mills, Ontario M3C 1S4**

Date Certified **16/11/83** Certified by (Signature) *R. Zinn*

2.6246

1984 06 22

Your File: 367-83  
Our File: 2.6246

Mr. Bruce W. Hanley  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

RE: Notice of Intent dated May 31, 1984  
Data for Assaying, Geophysical (Electromagnetic),  
Geological and Geochemical Survey on Mining  
Claims P 622291 et al and P 624103 et al in  
the Township of Fripp

---

The assessment work credits as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these Mining Claims and so indicate on your records.

Yours sincerely,

S.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-4888

S. Hurst:mc

cc: Northgate Exploration Limited  
P.O. Box 143  
7 First Canadian Place  
Suite 3140  
Toronto, Ontario  
M5X 1C7

cc: Mr. G.H. Ferguson  
Mining & Lands Commissioner  
Toronto, Ontario

cc: Resident Geologist  
Sioux Lookout, Ontario

**Technical Assessment**  
**Work Credits**

AMENDED

File 2.6246

Date 1984 06 08  
 Mining Recorder's Report of Work No. 367-83

Recorded Holder	NORTHGATE EXPLORATION LIMITED
Township or Area	FRIPP TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<b>Geophysical</b> Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ 15 _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	P 624103 to 113 inclusive 624293 to 299 inclusive 624303-04 628036-37 628041 to 045 incl.

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey                       Insufficient technical data filed



**Technical Assessment  
Work Credits**

File  
2.6246

Date  
1984 06 05

Mining Recorder's Report of Work No. 367-83

AMENDED

Recorded Holder	NORTHGATE EXPLORATION LIMITED
Township or Area	FRIPP TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<b>Geophysical</b> Electromagnetic _____ 20 days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ 20 days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	P 624106 to 113 inclusive 624293 to 299 inclusive 624303-04 628036-37 628041 to 045 inclusive

**Special credits under section 77 (16) for the following mining claims**

<u>15 DAYS GEOLOGICAL &amp; ELECTROMAGNETIC</u> P 624103-04	<u>10 DAYS GEOLOGICAL &amp; ELECTROMAGNETIC</u> P 624105
--	---

**No credits have been allowed for the following mining claims**

<input type="checkbox"/> not sufficiently covered by the survey	<input type="checkbox"/> Insufficient technical data filed
---	--



June 15, 1984

Your file: 367-83

Our file: 2.6246

1984 05 31

Mr. Bruce W. Hanley  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. F.W. Matthews at 416/965-6918.

Yours very truly,

S.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: 416/965-1316

RJ S. Hurst:mc  
Encls.

cc: Northgate Exploration Limited  
P.O. Box 143  
1 First Canadian Place  
Suite 3140  
Toronto, Ontario  
M5X 1C7

cc: Mr. G.H. Ferguson  
Mining & Lands Commissioner  
Toronto, Ontario

B45

FILE



Ministry of  
Natural  
Resources

Ontario

Notice of Intent  
for Technical Reports

1984 05 31

2.6246/367-83

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Lands Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.



**NORTHGATE EXPLORATION LIMITED**

SUITE 3140, P.O. BOX 143, 1 FIRST CANADIAN PLACE, TORONTO, CANADA M5X 1C7 • TELEPHONE (416) 362-8683 • TELEX 06-217786

<b>RECEIVED</b>	
Land Management Branch	
CIRCULATE	<input type="checkbox"/>
COMMENTS PLEASE	<input type="checkbox"/>
BY	
JUN --6 1984	
E. E. YUNDT	
J. R. MORTON	
J. C. SMITH	
W. L. GOOD	
R. 6543	

June 5, 1984

Mr. Bruce W. Hanley  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario P4N 2S7

Re: Timmins File #367-83  
Land Mgmt. Branch #2.6246

Dear Sir:

Please find enclosed two copies each of invoices and cheques for analytical work by Bondar-Clegg of Ottawa.

We would like to apply 60 days immediately to the claims indicated and hold the remaining 103.53 days in reserve pending Mining Lands review of the data.

Thank you for your attention to this matter.

Yours truly

NORTHGATE EXPLORATION LIMITED

R. A. Zinn  
Project Geologist

RAZ:sd

c.c. Sue Hurst,  
Mining Lands Branch  
Whitney Block, Room 6610  
Queen's Park  
Toronto, Ontario M7A 1W3

**RECEIVED**  
JUN 06 1984  
MINING LANDS SECTION



**NORTHGATE EXPLORATION LIMITED** 0009929

TORONTO, CANADA

December 14 19 83

PAY **785-304 2453** \$ **2,502.80**

**NORTHGATE EXPLORATION LIMITED**

TO THE ORDER OF **Bondar-Clegg & Co. Ltd.**  
**764 Belfast Road**  
**Ottawa, Ontario**  
**L K1G 0Z5**

PER *Norah J. Allma*  
 NOT NEGOTIABLE  
 PER *[Signature]*

THE TORONTO DOMINION BANK  
 55 KING ST. W. & BAY ST.  
 TORONTO, M5K 1A2 CANADA

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW

NORTHGATE EXPLORATION LIMITED - REMITTANCE ADVICE

PLEASE DETACH BEFORE DEPOSITING

DEBIT			CREDIT		
750-304	2,079	45			
785-304	2,453	00			

FILE COPY

$$\frac{2,453}{15} = 163.53 \text{ days}$$

*[Signature]*  
 12/2/83  
 750-304

Company Ltd.  
K10 025  
Phone: (613) 237-3110  
Telex: 053-4455



# BONDAR-CLEGG

NORTHGATE EXPLORATION LIMITED  
B. HARPER  
P.O. BOX 143  
1ST CAN. PLACE  
TORONTO, ONT. M5X 1C7

Invoice: 105049  
Date: December 05, 1983  
Report No: 013-3549  
Project: 785

✓ 446 Analyses of Copper	at	1.90	847.40	
✓ 446 Analyses of Nickel	at	0.95	423.70	
✓ 446 Analyses of Lead	at	0.95	423.70	
✓ 446 Analyses of Zinc	at	0.95	423.70	
Subtotal			2118.50	2118.50
Sample Preparation				
✓ 446 Samples of DRY, SEIVE -80	at	0.75	334.50	
Subtotal			334.50	334.50
Invoice Total				\$2453.00
				-----

*Handwritten:*  
12/12/83  
785-304

THIS IS A PROFESSIONAL SERVICE  
ACCOUNTS DUE WHEN RENDERED



*Feb. 24/84*

Mining Lands Comments

*map (Geology) not released*

To: Geophysics *Mr. Barlow.*

Comments

Approved  Wish to see again with corrections Date *March 19/84* Signature *RRL*

To: Geology - Expenditures *Mr. Kustra.*

Comments

Approved  Wish to see again with corrections Date *April 10/84* Signature *Kustra*

To: Geochemistry *Dr. Fortescue.*

Comments *Soil Geochemical Rept very brief*

*LO* *hgt*

Approved  Wish to see again with corrections Date *March 19th 1984* Signature *JAC Fortescue*

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

Initial Check

P.K.

Assessed

Approved Reports of Work  
sent out

Notice of Intent filed

Approval after Notice of Intent  
sent out

Duplicate sent to Resident  
Geologist

Duplicate sent to A.F.R.O.



1984 01 13

Our File: 2.6246

Mr. Bruce Hanley  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

We have received reports and maps for Data for Assaying and for a Geophysical (Electromagnetic) Geological and Geochemical Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 622291 et al and P 624103 et al in the Township of Fripp.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with you prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours very truly,

J.R. Morton  
Acting Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416)965-1380

M.E. Anderson:mc

cc: Northgate Exploration Ltd  
Suite 3140  
P.O. Box 143  
1 First Canadian Place  
Toronto, Ontario  
M5X 1C7  
Attention: R.A.Zinn

2.6246

Em GL GC

	Em	GL	GC			
624103	1/4	1/4	✓			
04	1/4	1/4	3/4			
05	1/2	1/2	1/2			
06	✓	✓	1/2			
07	✓	✓	3/4			GC
08	✓	✓	1/4			20x27 = 540
09	✓	✓	1/4			540 ÷ = 14.69
10	✓	✓	3/4			715
11	✓	✓	1/4			
12	✓	✓	1/4			
13	✓	✓	3/4			
624293	✓	✓	1/4			
94	✓	✓	✓			
95	✓	✓	✓			
96	✓	✓	1/4			
97	✓	✓	1/4			
98	✓	✓	✓			
99	✓	✓	✓			
624303	✓	✓	3/4			
04	✓	✓	1/2			
628036	✓	✓	1/4			
37	✓	✓	1/2			
628041	✓	✓	1/2			
42	✓	✓	1/2			
43	✓	✓	1/2			
44	✓	✓	✓			
45	1/2	1/2	3/4			
			9.75			
			27			
			36.75			

*no good work*

622291 ✓

92 ✓

93 ✓

94 ✓

582 ✓

624096 ✓

97 ✓

98 ✓

99 ✓

100 ✓

101 ✓

102 ✓

5  
2  
/

PRICE TWP. M.307

THE TOWNSHIP OF  
FRIPP

DISTRICT OF  
TIMISKAMING  
PORCUPINE  
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

DISPOSITION OF CROWN LANDS

- PATENT, SURFACE AND MINING RIGHTS
- " SURFACE RIGHTS ONLY
- " MINING RIGHTS ONLY
- LEASE, SURFACE AND MINING RIGHTS
- " SURFACE RIGHTS ONLY
- " MINING RIGHTS ONLY
- LICENCE OF OCCUPATION
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED

NOTES

.400' surface rights reservation along the shores of all lakes and rivers.

Areas withdrawn from staking under Section 43 of the Mining Act (R.S.O. 1970.)  
Order No File Date Disposition

AND SITE OCCUPATION N.M.R.  
7/11/78

PLAN NO. M.281

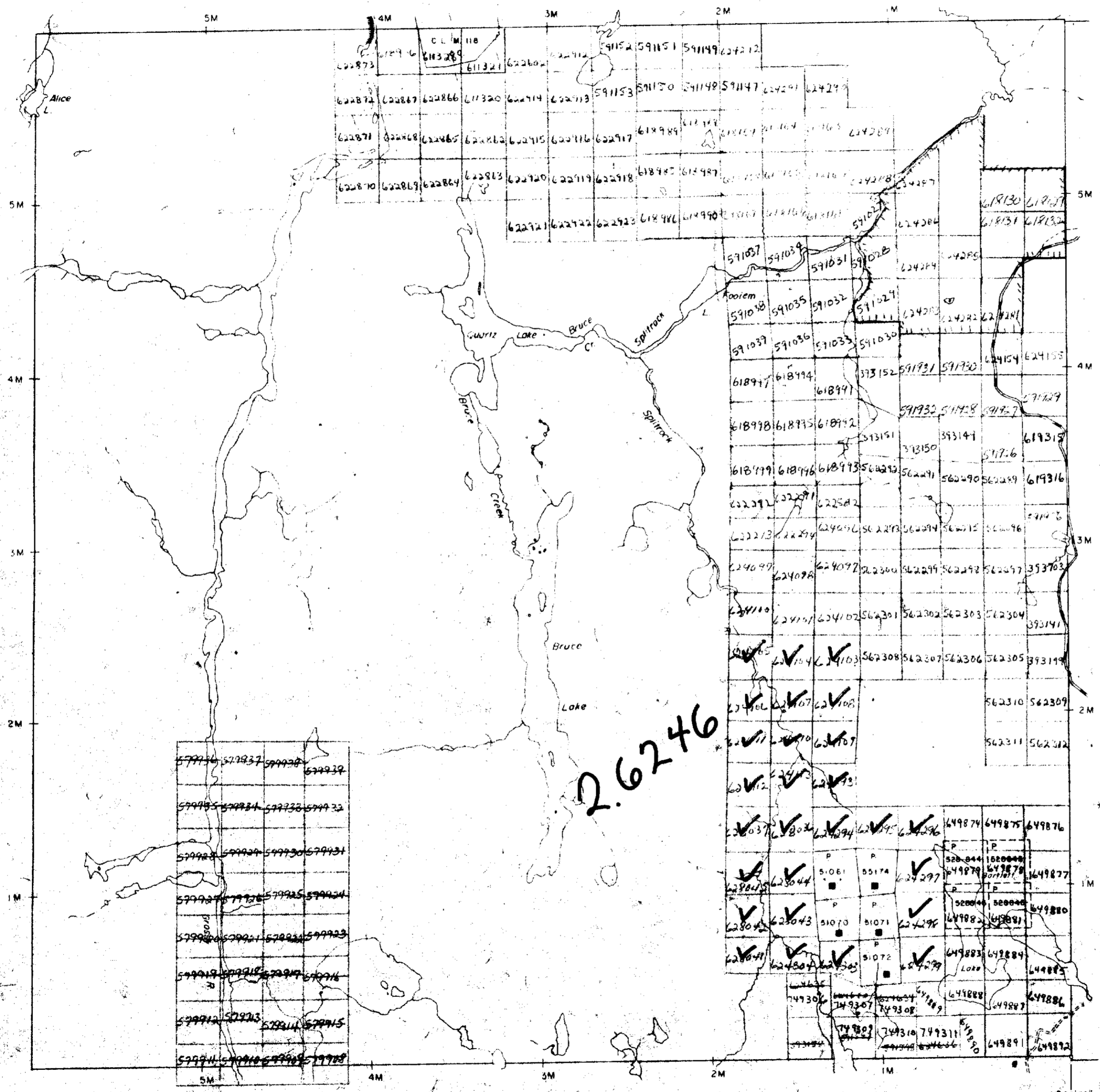
ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

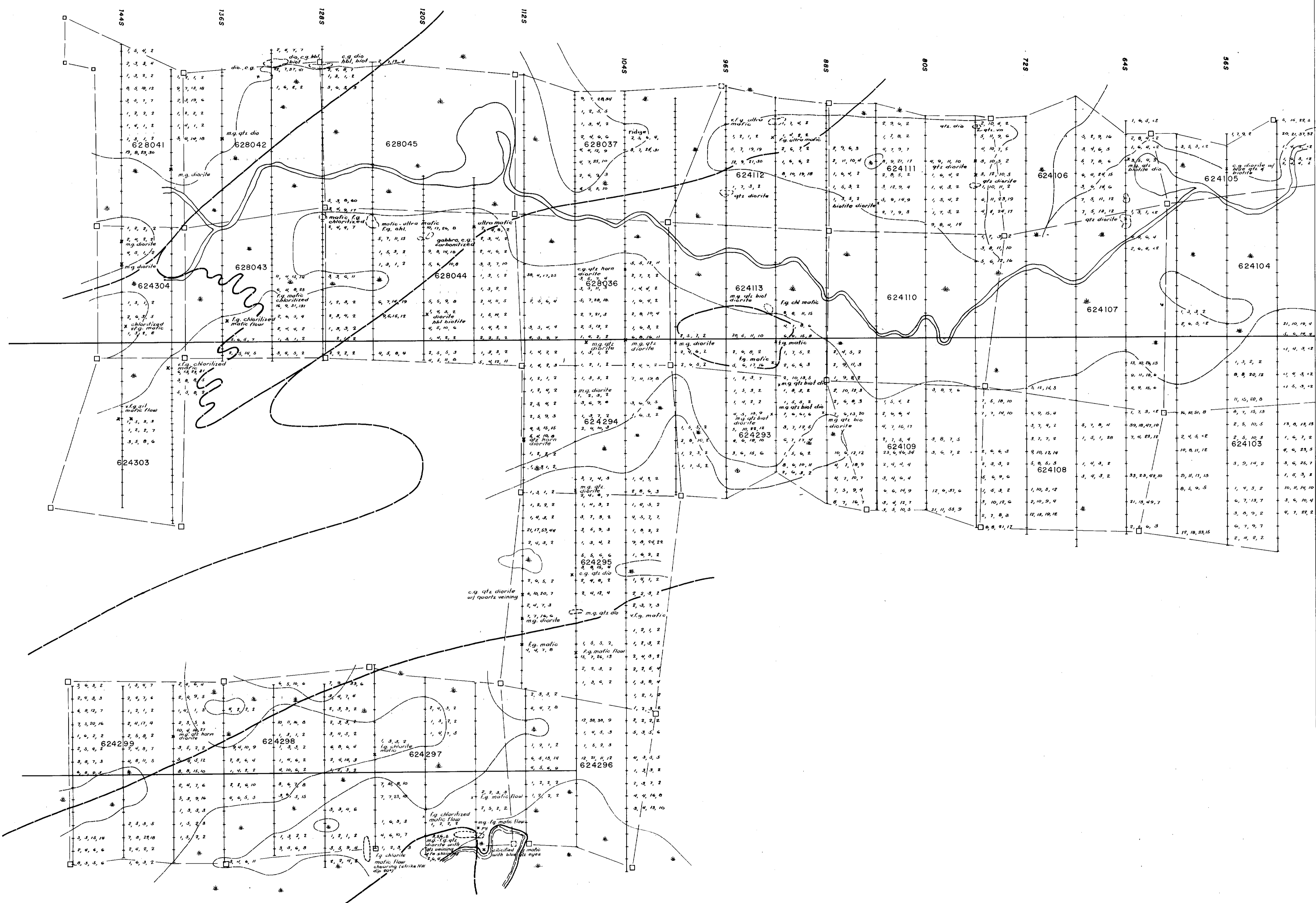
DATE OF ISSUE  
MAY 22 1984  
Ministry of Natural Resources  
TORONTO

MCKEOWN TWP. M.299

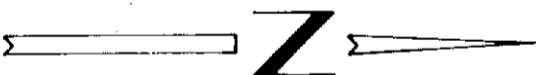
MARTHUR TWP. M.298

MUSGROVE TWP. M.304

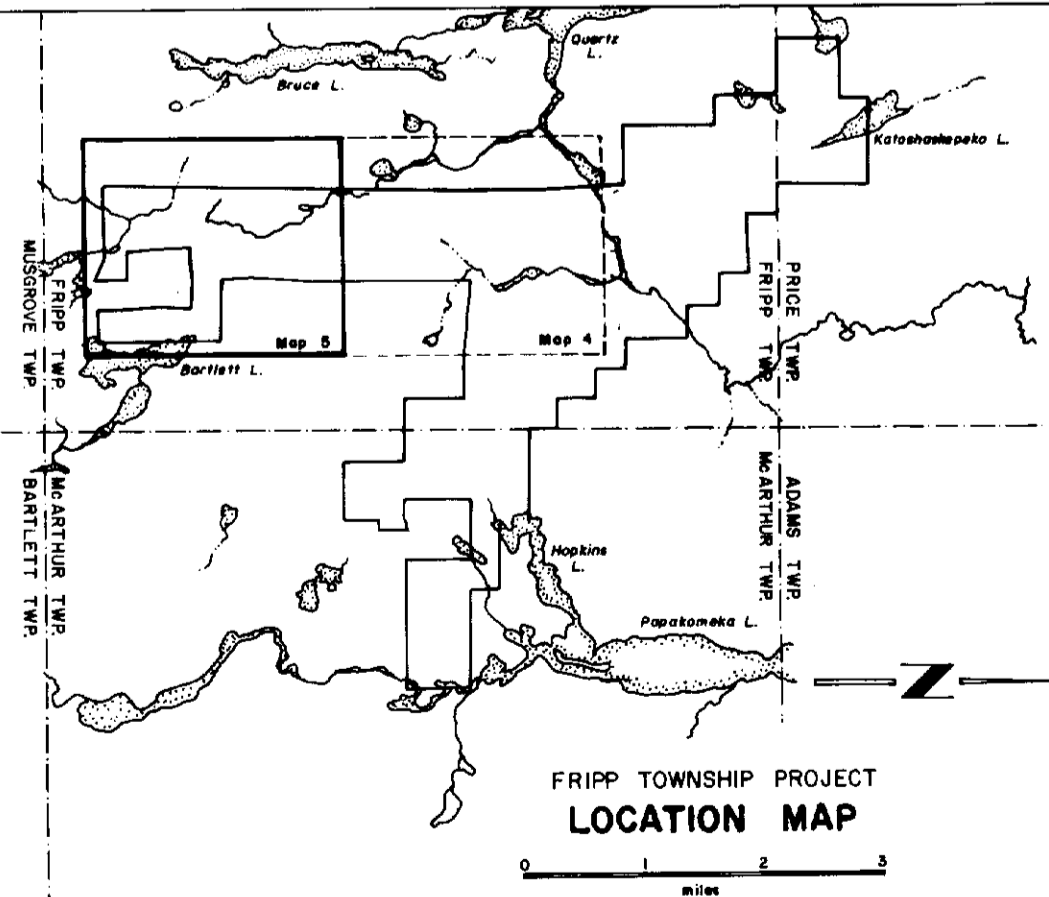




SOIL SAMPLE  
Cu, Pb, Zn, Ni (Values in ppm)



Scale 1:4800  
FEET 0 100 200  
METERS 0 100 200



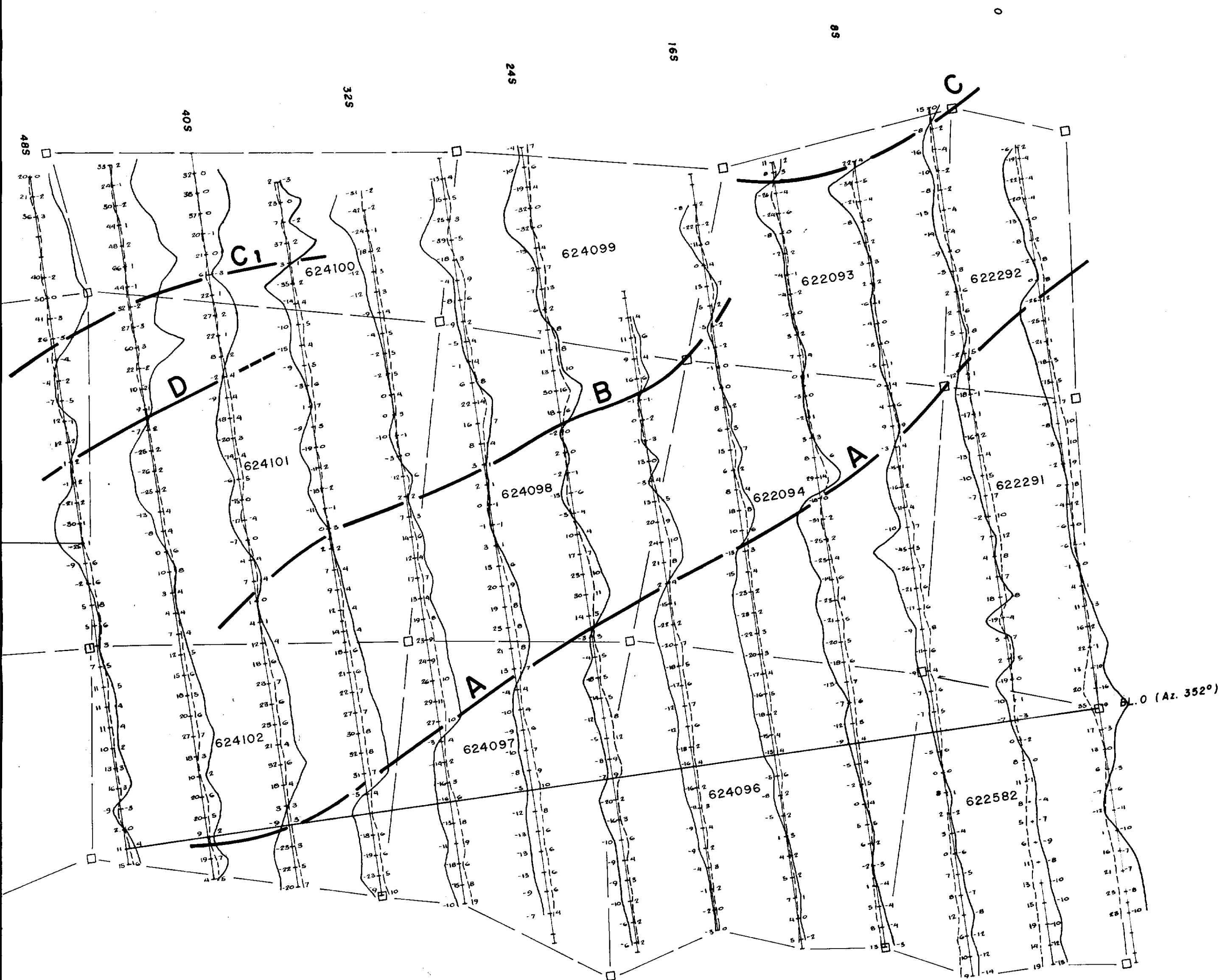
Northgate Exploration Limited

N.T.S. No. FRIPP TOWNSHIP PROJECT - NO 785  
FRIPP TOWNSHIP, DISTRICT OF TIMSKAMING, ONTARIO

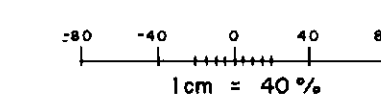
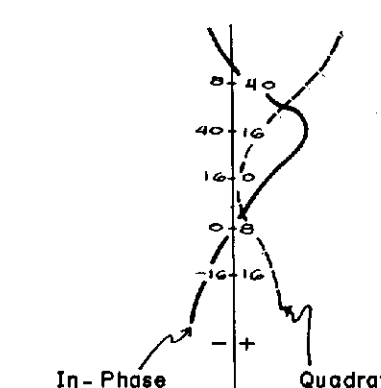
**GEOLOGY  
and  
GEOCHEMISTRY**

Work by: R. Zinn Date: Proj no: 785 Scale: 1"=400'  
1:4800  
Drawn by: Rodal Ortiz Date: Dec '83 Rev. by: R. Zinn Date: 4/1/84

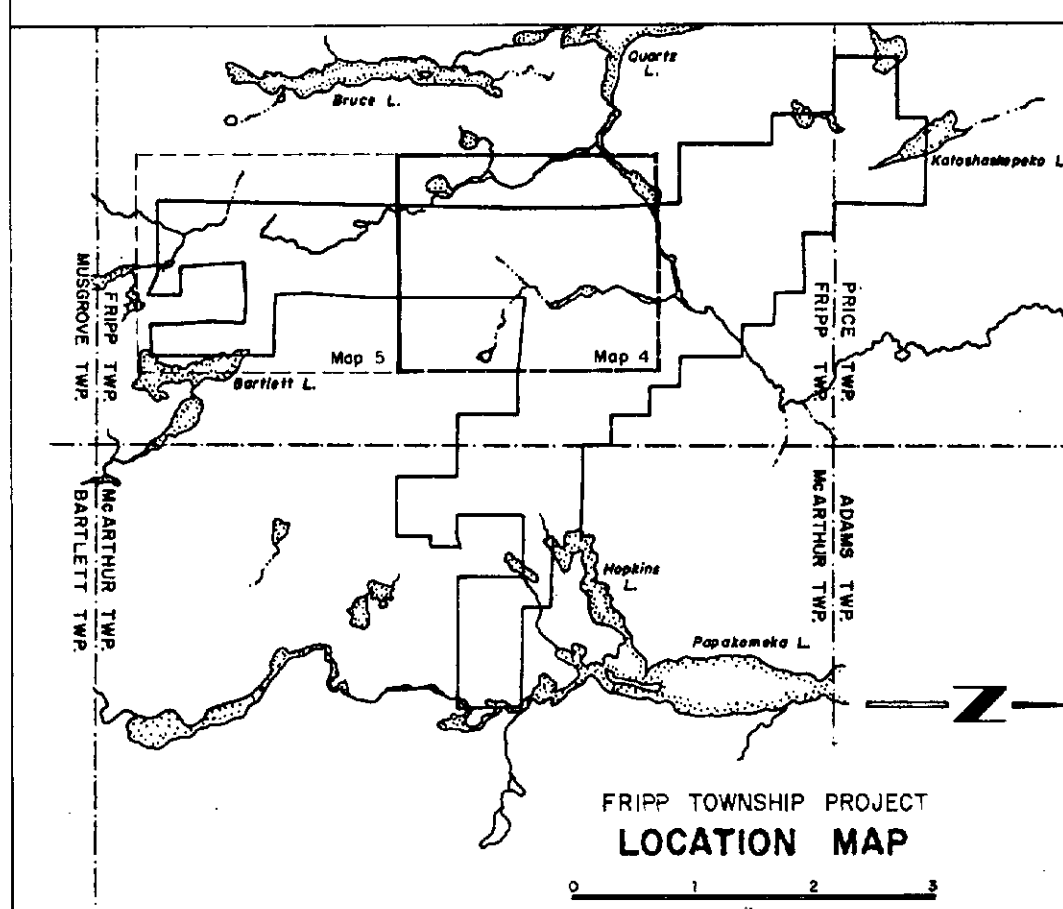




CONDUCTOR



Scale 1: 4800  
 FEET 0 100 200 300 400  
 METRES 0 100 200 300



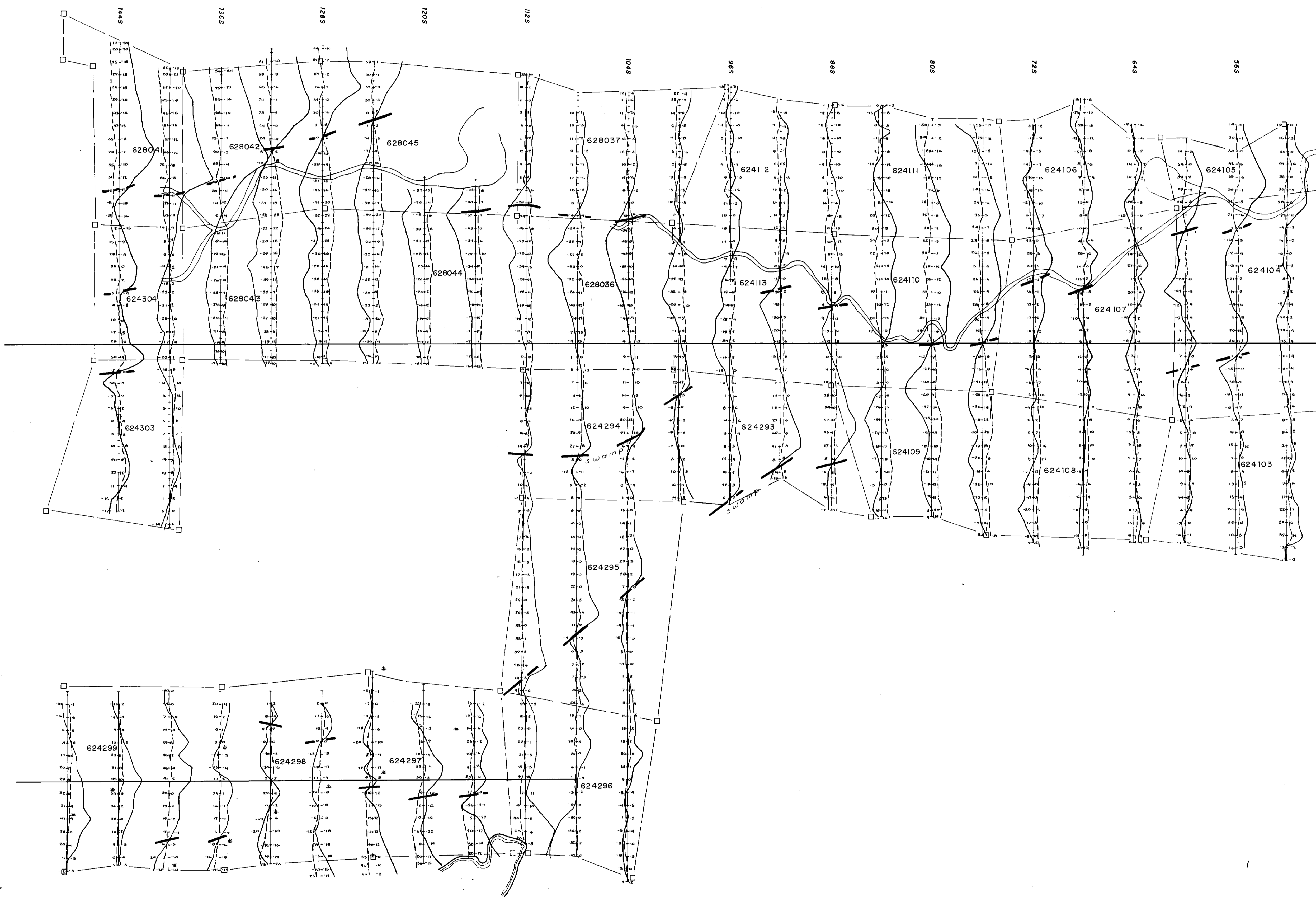
**Northgate Exploration Limited**

N.T.S. No.  
**FRIPP TOWNSHIP PROJECT - No 785**  
 FRIPP TOWNSHIP, DISTRICT OF TIMISKAMING, ONTARIO

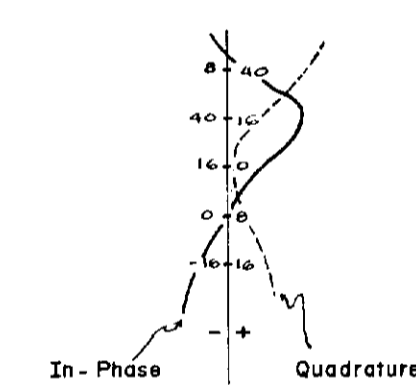
**VLF - EM**  
 PROFILE

Work by S. Orth	Date Oct./83	Proj. no. 785	Scale 1" = 400'
Drawn by S. Orth	Date Oct./83	Rev. by R. Zimm	Date 3/1/84





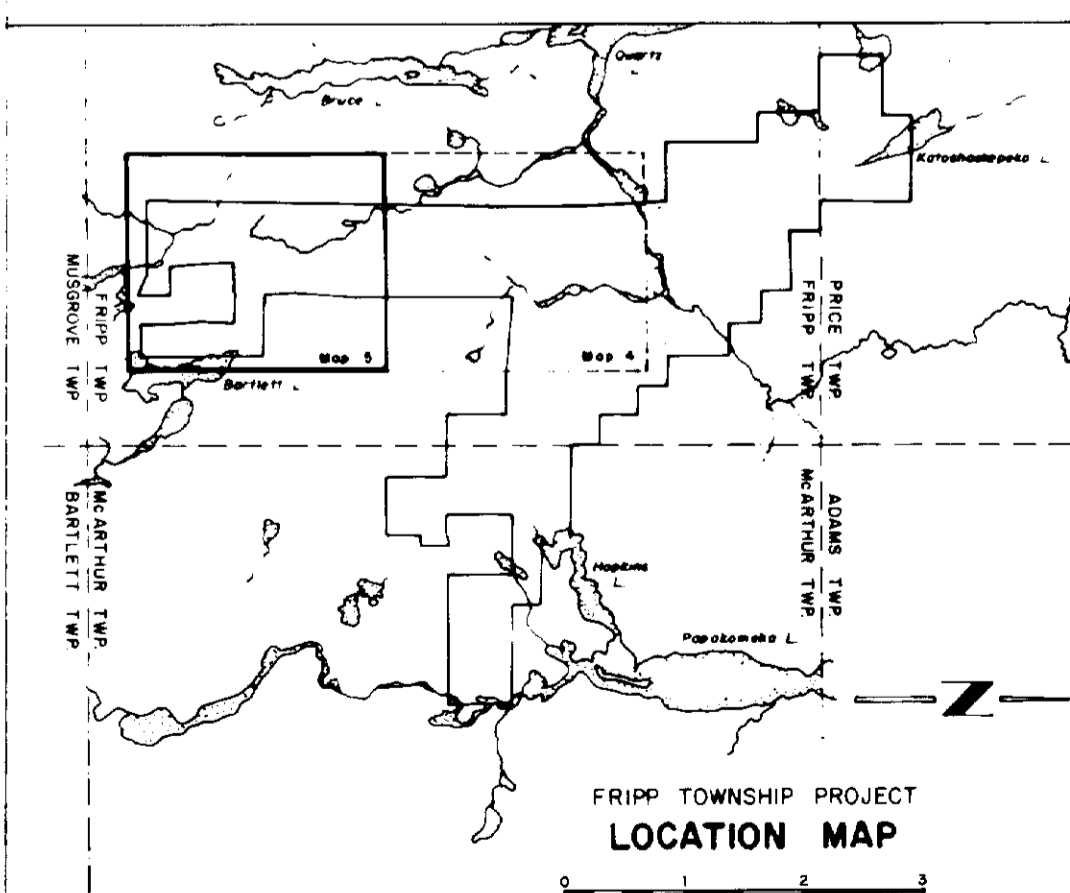
— PROBABLE CONDUCTOR



80 40 0 40 80  
1 cm = 40%  
In-Phase Quadrature



Scale 1:4800  
FEET 0 200 400  
METRES 0 200 400



FRIPP TOWNSHIP PROJECT  
LOCATION MAP

**Northgate Exploration Limited**

N.T.S. No. FRIPP TOWNSHIP PROJECT - NO 785  
FRIPP TOWNSHIP, DISTRICT OF TIMISKAMING, ONTARIO

**VLF - EM**  
PROFILE

Work by G. Orth, R. Vail Date Oct./83 Proj. no 785 Scale 1"=400  
1:4800  
Drawn by S. Orth Date Oct./83 Rev. by R. Vail Date 4/1/84

