



32D12SW0105 2.2062 HARKER

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RECEIVED  
MAR 11 1976  
PROJECTS UNIT

GEOPHYSICAL SURVEY  
NEWMEX GOLD RESOURCES INC.  
HARKER TOWNSHIP, ONTARIO

March 20, 1975

J. D. McCANNELL

NEWMEX GOLD RESOURCES INC.  
HARKER TOWNSHIP  
ONTARIO

INTRODUCTION

This report describes the results of an electromagnetic survey and a partial magnetometer survey over a group of eleven mining claims located in Harker Township, Larder Lake Mining Division, Ontario. This work was carried out during the latter part of February and early part of March, 1975.

The electromagnetic work showed a short conductor in the northeast corner of claim 430920 that coincides very well with a gold bearing zone of silicification and pyrite mineralization exposed in old trenching. A second short anomaly about 300 feet to the north occurs in an area of flooded muskeg but could represent the faulted offset of the first conductor. A third conductor was indicated in the west part of the claims group in claim 414447. This anomaly is approximately 1,700 feet long and occurs in an area of quite heavy overburden with no exposures of bedrock in the immediate vicinity.

PROPERTY, LOCATION AND ACCESS

The property covered by this report consists of eleven contiguous mining claims forming an irregularly shaped oblong block located in the east central part of Harker Township, Larder Lake Mining Division, Ontario. The claims included in the group are numbered 414444 to 414447 inclusive and 430914 to 430920 inclusive. The irregular shape of some of the claims and the block as a whole, results from the fact that the claims were mostly staked along old surveyed claim lines and cover an area largely bounded by patented claims.

Harker Township is located 65 miles east of Timmins and 20 miles north and east of Kirkland Lake. It is bounded on the east by Holloway Township and on the west by Garrison. It is readily accessible as Ontario Provincial Highway 101 passes through the north part of the township about 1 mile north of the claims group discussed herein.

#### TOPOGRAPHY

Harker Township is located within an area of a large regional sand plain and clay belt with scattered low hills and all covered by a fairly dense growth of small timber. Rock exposures are quite sparse and usually confined to the areas of higher ground. The claims group discussed in this report is mostly covered with sand and clay overburden but with some higher ground and areas of outcrop in the extreme east and east central parts. A small stream, known as Teddy Bear Creek flows in an easterly direction through most of the claims group and is accompanied by several areas of low marsh with a dense growth of tagalders.

#### GENERAL GEOLOGY

The geology of Harker Township is shown in fair detail on map number 1951-4, published by the Province of Ontario Department of Mines in 1951 on the scale of one inch to one thousand feet. This map accompanies report Volume LX Part VII, Geology of Harker Township by J. Satterly.

Harker Township is largely underlain by an assemblage of basic and acid lavas with some interbedded sediments. These rocks form a part of a large greenstone mass that includes Timmins and Kirkland

Lake and extends east through the Rouyn-Noranda area of Quebec. The volcanics are Keewatin type and the sediments include some early Precambrian greywacke, arkose and iron formation as well as some fine grained graphitic argillaceous material which could represent altered tuffs. These older lavas and sediments have been subjected to a wide range of intrusive activity including Haileyburian diabase, gabbro and ultrabasics such as peridotite, pyroxenite and dunite, and also Algoman type syenite, granite and quartz-feldspar porphyry, Matachewan diabase and Keweenawan olivine diabase.

The claims group discussed in this report is shown on Map 1951-4, to be largely underlain by basic lavas with a narrow band of early Precambrian greywacke extending in a south of west direction through the east part of the property. A very narrow band or dike of feldspar porphyry is shown as extending in an east-west direction through the extreme northeast part of the claims group.

The volcanic formations on the property consist of andesite and basaltic flows with small amounts of fragmentals. There is a considerable development of schist with the schistosity strike being east-west and the dip 70 to 75 degrees to the south. Some iron formation is closely associated with the volcanic rocks in the central part of the claims in outcrops exposed along Teddy Bear Creek. Silicification and pyrite mineralization occurs in the volcanic rocks at intervals along the contact with the feldspar porphyry dike exposed in the extreme northeast part of the claims group. Gold is sometimes associated with these zones of pyrite and silicification.

Map number 1951-4 shows the presence of a considerable amount of faulting on and in the immediate vicinity of this property. The

Porcupine-Destor Fault, a strong east-west regional structure is located about 1 1/2 miles to the north and many of the smaller fault structures such as those that occur on the claims group, are branch faults off the main regional structure. The Porcupine-Destor Fault or "Break", as it is sometimes referred to, is considered an important feature with respect to many ore occurrences both in northeastern Ontario and northwestern Quebec.

#### GEOPHYSICAL SURVEYS

A program of geophysical surveying was conducted over the group of eleven mining claims discussed in this report. This work, which consisted of both electromagnetic and magnetometer surveys, was carried out during the period February 19th and March 2nd, 1975. The electromagnetic survey was conducted over the entire claims group but the magnetic survey was confined to certain localized parts of the property. A Geonics EM-16 instrument utilizing the V.L.F. station at Cutler Main was used for the electromagnetic and a Scintrex MF-1 magnetometer for the magnetic work. A total of 12.3 miles of line including base lines, was cut and chained. The traverse lines were run north-south and were spaced at 400-foot intervals except where more detail was required and then they were spaced 200 feet apart. The observations were made at 100-foot intervals along these lines.

The electromagnetic survey showed a short conductor which appears to coincide with a known zone of gold-pyrite mineralization and also one parallel and about 300 feet to the north. It is possible that these two conductors represent the faulted segments of the same zone.

A very strong conductor was also indicated in the west part

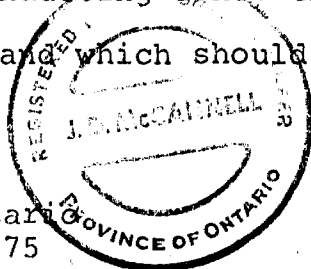
of the claims group in an area completely overlain by sand and clay overburden. This anomaly is 1,700 feet long and appears to be slightly offset by faulting. It strikes east-west conforming with the regional schistosity strike and because of the irregular shape of the claims in this immediate area, it extends off the property both to the east and west.

The magnetometer work was confined to the areas of the conducting zones. The survey showed some relatively higher readings but no anomalies coinciding with the E.M. conductors. These higher magnetic readings are believed to reflect basic phases of the greenstone complex underlying most of the claims group.

CONCLUSIONS AND RECOMMENDATIONS

It is the opinion of the writer, that the claims group covered by this report, warrants a much more thorough test than it has been subjected to in the past. It would appear that none of the former holders of this ground, were sufficiently well financed to carry out an extensive diamond drilling program using equipment capable of penetrating deep overburden.

Reports covering previous work indicate gold to be present and usually associated with silicified shear zones often mineralized with variable amounts of pyrite. Most of the past work has been concentrated in an area of outcroppings in the northeast part of the property, along the contact of a narrow feldspar porphyry dike. The electromagnetic survey recently completed on the ground, has indicated conducting zones that could be caused by mineralized shear zones and which should be checked by diamond drilling.

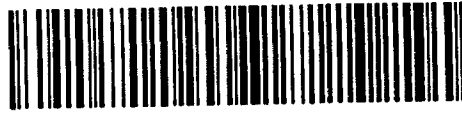


*James D. McCannell*  
Respectfully submitted,

Toronto, Ontario  
March 20, 1975

James D. McCannell, P. Eng.,  
Consulting Geologist

J. D. McCANNELL



32D12SW0105 2.2062 HARKER

900

File 2.2062

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT  
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT  
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

RECEIVED

MAR 11 1976

PROJECTS UNIT

Type of Survey(s) Electromagnetic Magnetometer  
 Township or Area Harker Twp.  
 Claim Holder(s) Newmex Gold Resources Inc.  
1014 - 111 Richmond St. W. Toronto, Ont.  
 Survey Company Exchange Mining Holdings Ltd.  
 Author of Report J.D. McCannell  
 Address of Author 326 Adelaide St. W. Toronto, Ont.  
 Covering Dates of Survey Feb. 19 - March 2, 1975  
 (linecutting to office)  
 Total Miles of Line Cut 12.3

**MINING CLAIMS TRAVERSED**  
List numerically

414444  
 (prefix) (number)  
 3/4 414445 \* 2 days mag.  
 3/4 414446  
 ✓ 414447 \* 18 days mag.  
 3/4 430914  
 430915  
 7/8 430916  
 3/4 430917 \* 4 days mag.  
 430918  
 1/4 430919 \* 16 days mag.  
 3/4 430920 \* 5 days mag.

**SPECIAL PROVISIONS  
CREDITS REQUESTED**

	DAYS per claim
Geophysical	
-Electromagnetic	40
-Magnetometer	
-Radiometric	
-Other	
Geological	
Geochemical	

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

**AIRBORNE CREDITS** (Special provision credits do not apply to airborne surveys)

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: March 4, 1976 SIGNATURE: [Signature]  
Author of Report or Agent

L.D.

Res. Geol. \_\_\_\_\_ Qualifications 63.2502.

**Previous Surveys**

File No.	Type	Date	Claim Holder

\* claims on which Magnetometer work carried out.

no mag claims + 7 x 20 = 140 days  
 plus 1st survey + 5 claims +  
 ∴ 140 + (7 x 5) = 175 days per  
 claim.

TOTAL CLAIMS 11

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations EM 659 Mag. 259 Number of Readings Em-659 Mag-259
Station interval 100 feet Line spacing 200 and 400 feet
Profile scale EM - 1" = 20% Mag. - 500 gammas
Contour interval

MAGNETIC

Instrument Scintrex MF-1
Accuracy - Scale constant + or - 20 gammas
Diurnal correction method base Stations hourly
Base Station check-in interval (hours) every hour
Base Station location and value Base Line at lines 1400W, 2000W, 2600W, 1600E and 2800E

ELECTROMAGNETIC

Instrument Geonics EM-16
Coil configuration
Coil separation
Accuracy + or - 1%
Method: [X] Fixed transmitter [ ] Shoot back [ ] In line [ ] Parallel line
Frequency 17.8 kHz Cutler Maine (specify V.L.F. station)
Parameters measured In Phase, Out of phase

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



LAMPLUGH TWP M-358

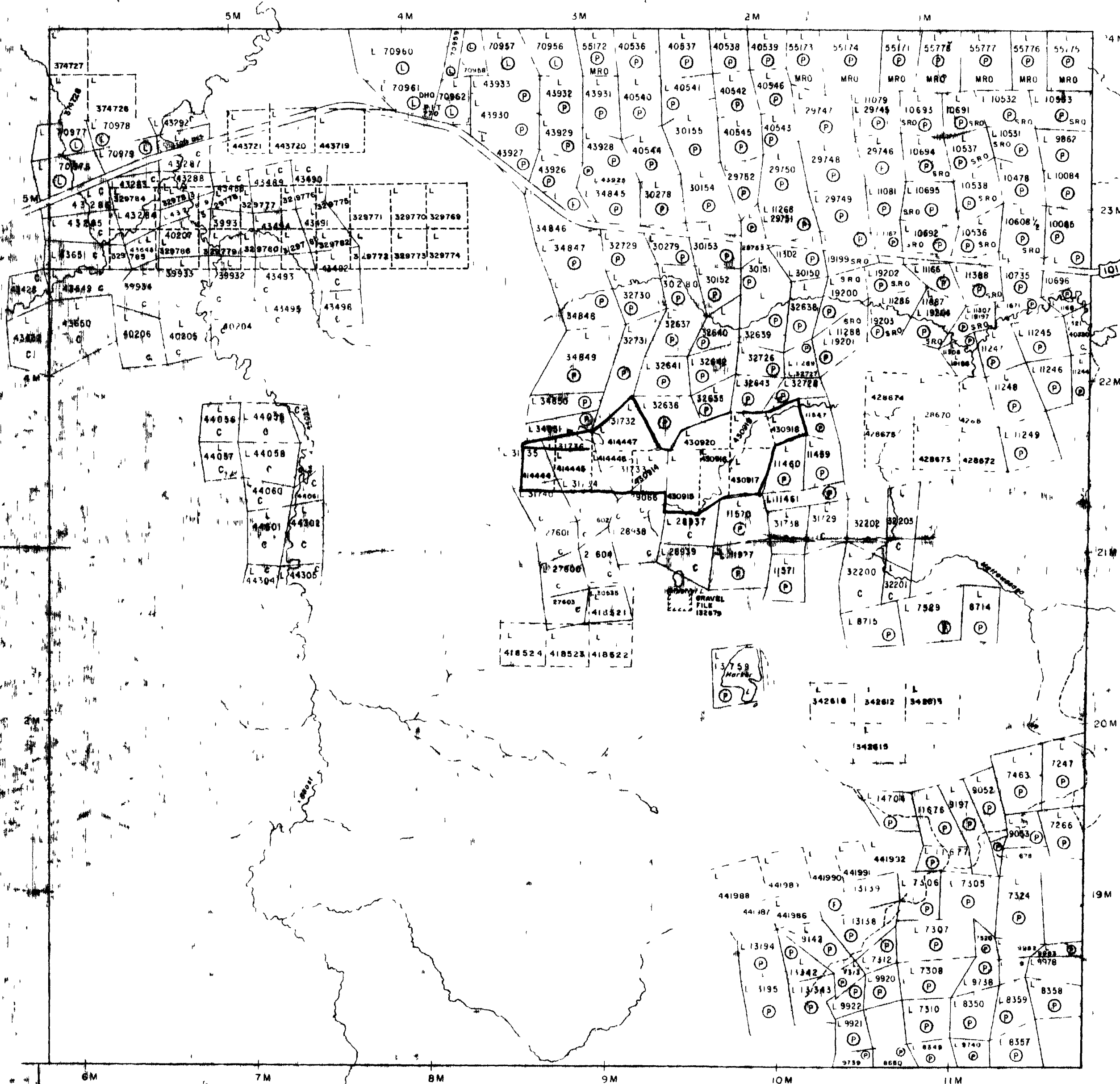
THE TOWNSHIP OF (22062)

HARKER

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE 1-INCH 40 CHAINS



GARRISON TWP M-349

HOLLOWAY TWP M-356

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED

NOTES

400' Surface Rights reservation around all lakes and rivers

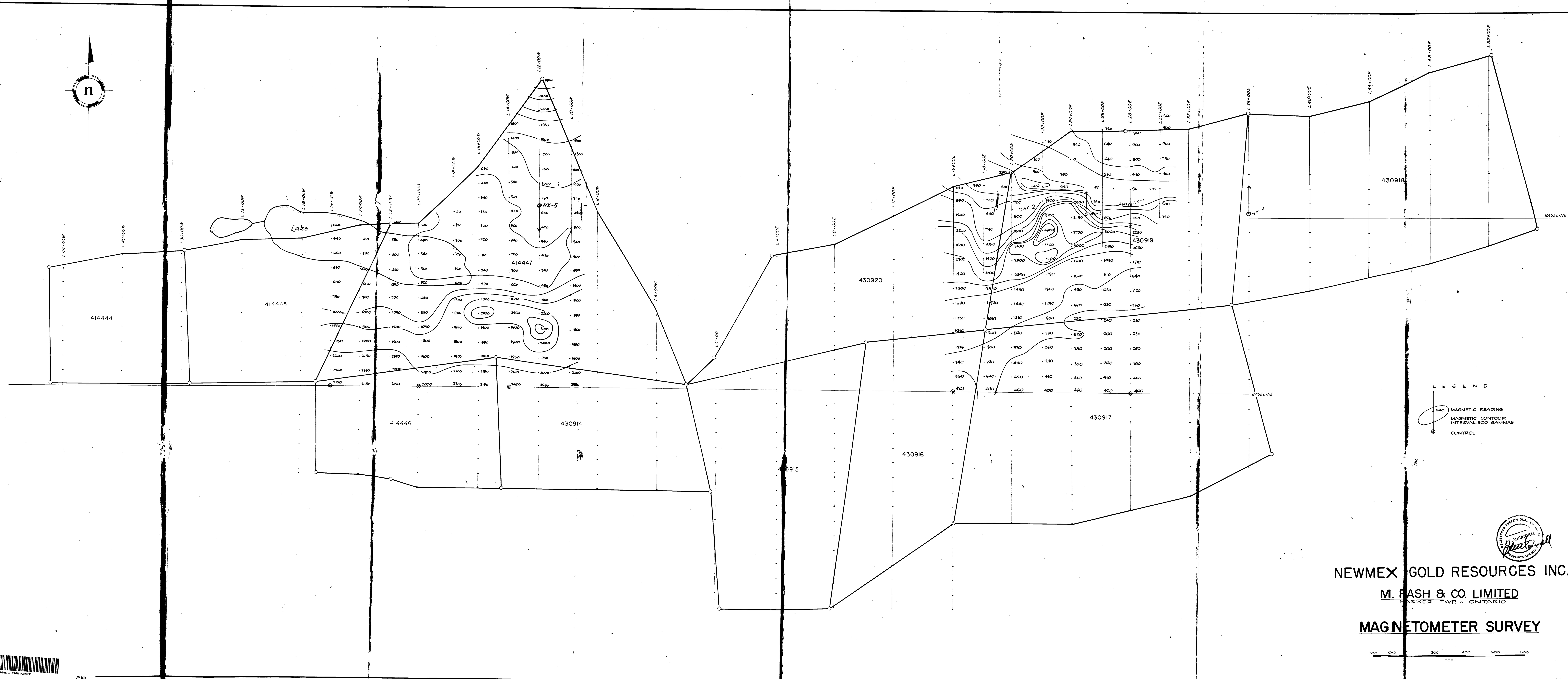
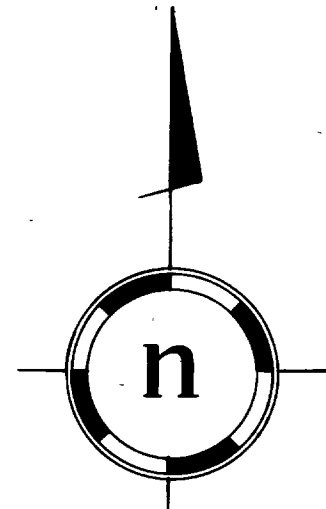
DATE OF ISSUE  
MAR 10 1976  
SURVEYS AND MAPPING  
BRANCH



ELLIOTT TWP M-347

PLAN NO M-353

MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



LEGEND

- 640 MAGNETIC READING
- MAGNETIC CONTOUR
- INTERVAL: 500 GAMMAS
- CONTROL

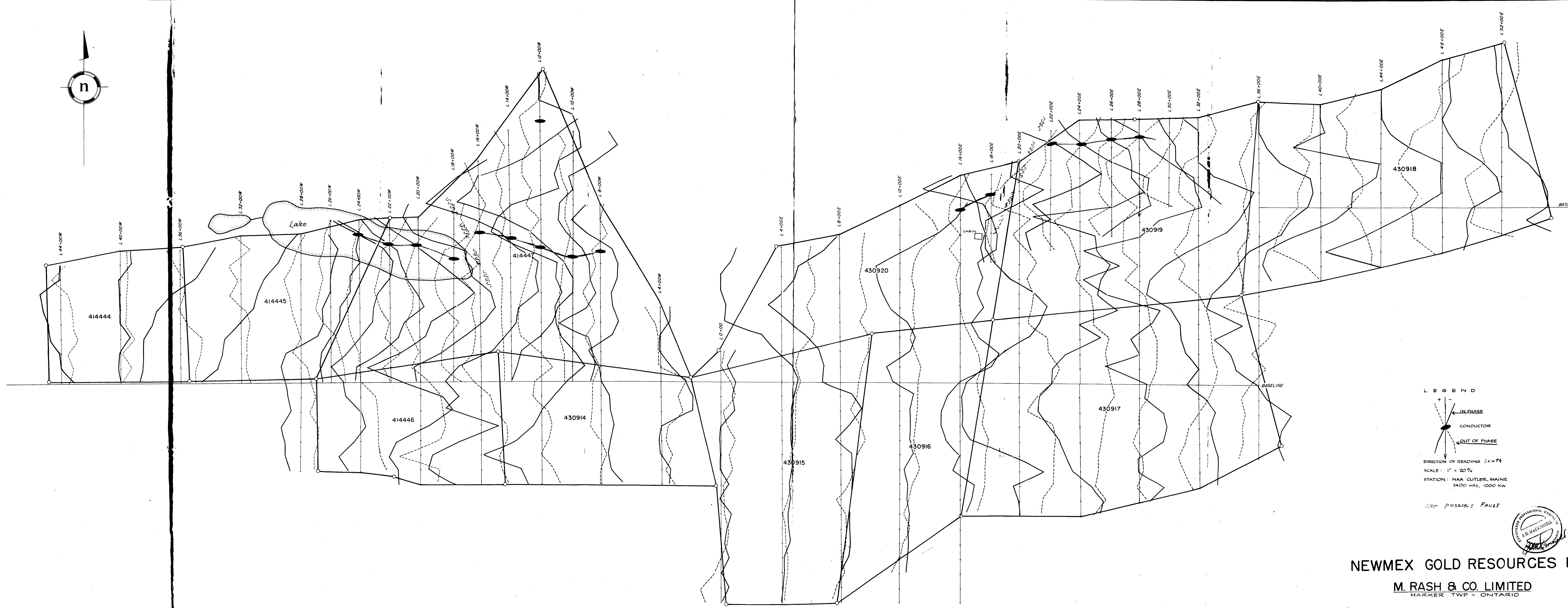
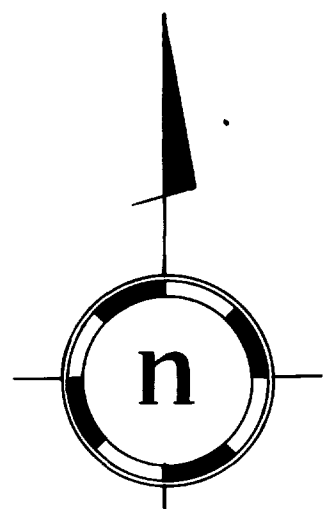


NEWMEX GOLD RESOURCES INC.

M. H. HASH & CO. LIMITED  
PARKER TWP - ONTARIO

MAGNETOMETER SURVEY



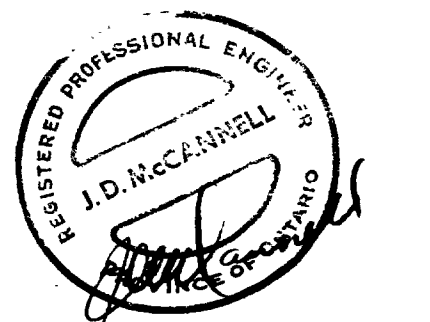


**LEGEND**

+ -  
 IN PHASE  
 CONDUCTOR  
 OUT OF PHASE

DIRECTION OF READING South  
 SCALE: 1" = 20'  
 STATION: NAA CUTLER, MAINE  
 2400 HZ, 1000 KW

--- POSSIBLE FAULT



NEWMEX GOLD RESOURCES INC.

M. RASH & CO. LIMITED  
HARKER TWP - ONTARIO

**ELECTROMAGNETIC SURVEY**

