



42801NE 000B P. 9744 REEVES

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REPORT ON THE UNIGOLD RESOURCES LTD., MORIN PROPERTY

located in REEVES, PENHORWOOD,  
KEETH and MUSKEGO TOWNSHIPS  
Porcupine Mining Division  
Ontario

by

Bruce Barnes  
Consulting Geologist

DURHAM GEOLOGICAL SERVICES INC.  
Box 734  
1176 Delnite Road  
Timmins, Ontario  
P4N 7G2

RECEIVED  
MAY 10 1984  
MUSKOGEE DIVISION  
TIMMINS ONTARIO



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TABLE OF CONTENTS

SUMMARY ..... 5

PROPERTY ..... 1

LOCATION, ACCESS AND FACILITIES ..... 1

PREVIOUS WORK ..... 2

WORK COMPLETED AND PERSONNEL ..... 4

OVERBURDEN ..... 4

GEOLOGY

Introduction ..... 5

Mafic Volcanics ..... 7

Felsic Volcanics ..... 7

Clastic Sediments ..... 8

Chemical Sediments ..... 9

Mafic Intrusive ..... 9

Felsic Intrusives ..... 10

Secondary Cleavage ..... 10

TRENCHING AND STRIPPING ..... 11

SELECTED REFERENCES ..... 13

## SUMMARY

The 99 claim Morin Property of Unigold Resources Ltd. has never been fully explored in the past, although several companies have sporadically ventured incomplete programs on various areas within or overlapping the property boundaries. A systematic exploration program has now been partially completed under the scrutiny of Durham Geological Services Inc. A 99km grid has been established and cut with 200m line spacing with stations on those lines at 25m intervals. Magnetometer and IP surveys have been completed. Geologic mapping has outlined mafic and felsic volcanics, clastic and chemical sediments, mafic and felsic intrusives. Heavy equipment has been utilized to trench through shallow overburden in order to explain geophysical anomalies.

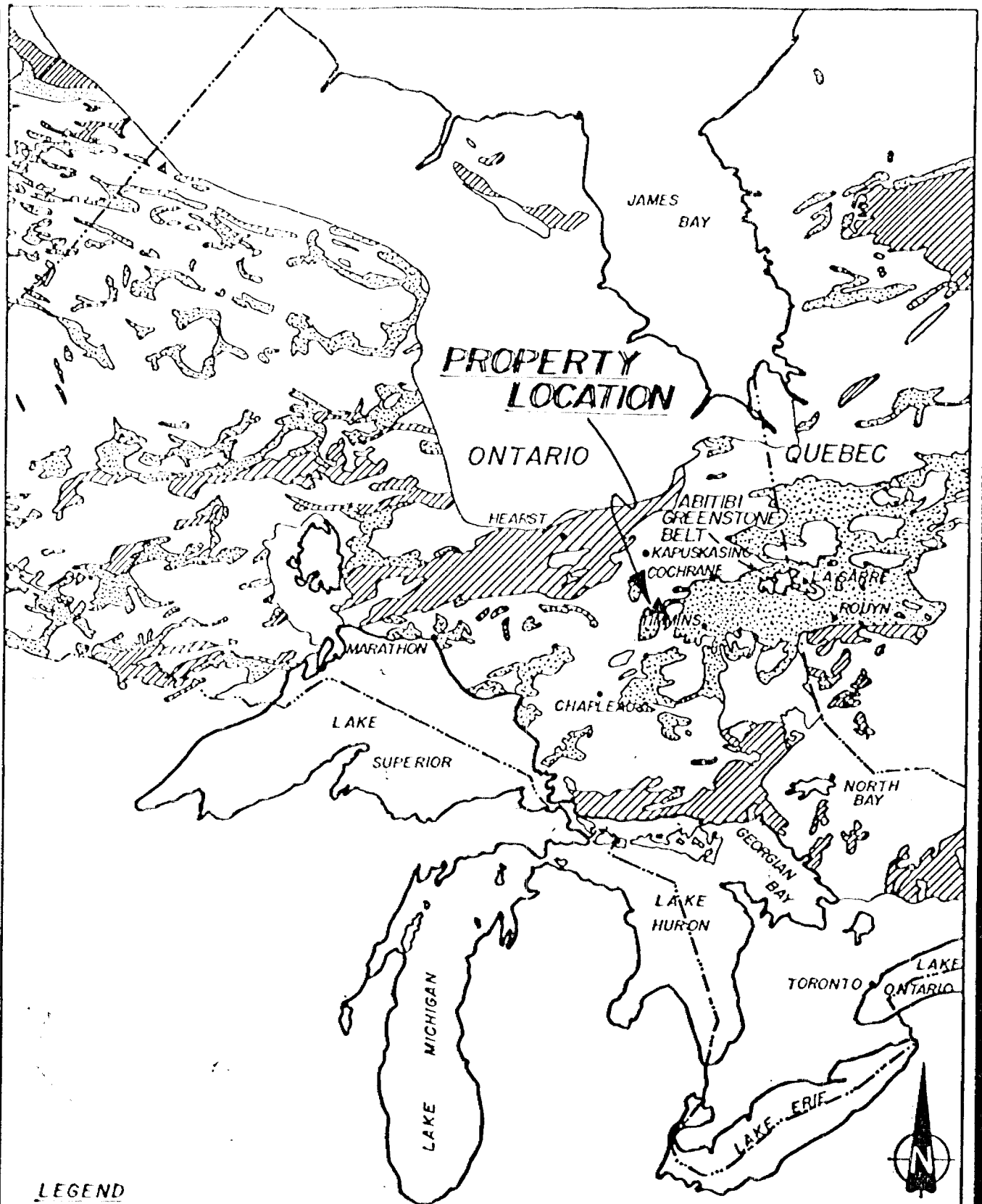
## PROPERTY

The Unigold resources Ltd., Morin Property consists of a group of 99 contiguous unpatented mineral claims located approximately 15km southeast of the town of Poleyet, in the Porcupine Mining Division. The claims located in Muskego, Penhorwood, Keith and Reeves townships, are listed below.




P 756442 - 756444  
756555 - 756559  
825766 - 825771  
832311 - 832320  
848214 - 848223  
849523 - 849532  
849701 - 849710  
876320  
876320  
879189 - 879198  
880518 - 880527  
880850 - 880853  
899984 - 899986  
901684 - 901693  
915467 - 915470  
923441 - 923443

## LOCATION, ACCESS AND FACILITIES

The subject property is located approximately 90km west-southwest of Timmins, Ontario and approximately 15km southeast of Poleyet. Highway 101 west which joins Timmins and Poleyet crosses through the central part of the property, providing excellent access to the western part of the property, while the north edge is accessed by a paved road that was formerly the



**LEGEND**

-  Archean greenstone and associated Sediments
-  Granitic Terrain
-  Archean Sediments, some volcanics and intrusions

Revisions	DURHAM GEOLOGICAL SERVICES INC.	
	UNIGOLD RESOURCES LTD.	
	<b>PROPERTY LOCATION</b>	
	Date July 15/88	Drawn K.B. Scale 1:7,603,200
	N.T.S.	Approved B.D. Figure 1

MUSKEGO TWP

UNIGOLD RESOURCES LTD.  
PROPERTY BOUNDARY

RELVES TWP

NOTE: All outcrops visited by Author,  
North of Hwy 101 show Intense  
Carbonate and Sericite Alteration

Au  
x 17 oz.

Au  
x .03  
5' Qtz. vn.  
x Au

Au  
x 10' Qtz. vn.

1.04 Au  
.21  
.26 x

Au

H<sup>+</sup> Anomaly

Intense  
Carb Sericite  
Qtz Py x .03  
Au

3 Au  
x .08 Ch. Seric.

LEGEND

- 1 Unsubdivided
- 1a Light coloured chlorite-tremolite metavolcanics
- 1b Dark coloured actinolite-hornblende schist & gneiss
- 1c Chloritic schist, sericite-carbonate schist
- 2b felsic tuff, felsic lapilli tuff
- 3 Unsubdivided
- 3a Greywacke
- 3b Conglomerate
- 3c Slate, Argillite
- 3d Phyllite, sericite schist, chlorite schist
- 7 Granitic rock
- 7b Feldspar Porphyry, Quartz feldspar porphyry  
x 17-17oz/ton Au Sampling by D. Morin

FROM: MND's maps 2230, 1950-4, and  
Information from D. Morin

Revisions

DURHAM GEOLOGICAL SERVICES INC.

UNIGOLD RESOURCES LTD.

PROPERTY GEOLOGY

Date July 15/86 | Drawn: Kim | Scale: 1" = 1/2 mi  
N.T.S. | Approved: B.D. | Figure: 5

old Highway 101.

There are several excellent areas on the property to set up tents or trailers for a camp. Alternative accommodation and meals are available at the Mooseland Motel just 5km west of the property.

The Groundhog River which traverses the western and central portions of the property provides additional access and could be used as a source of water in the event of any mining operations. A gravel road that leads to the railway siding of Kukatash passes very close to the extreme southeast corner of the property, thereby providing access to the eastern part of the property.

Sufficient electricity to carry on a significant mining operation should be available from the site of the previous asbestos mining operation of Canadian Johns Manville Co. Ltd. located in the southeastern part of Reeves Township, approximately 8km east of the central part of the Morin Property. A skilled labor pool and all necessary support facilities, including custom mill facilities are available in Timmins, located 90km to the west of the property.

#### PREVIOUS WORK

A search of the Ministry of Northern Development and Mines files in Timmins revealed that while considerable work programs have been undertaken in the area, only sporadic incomplete programs have been completed in the immediate vicinity of the property and only part of that work was in search of gold mineralization. The Brewis and White claims which covered the northwest corner of Penhorwood Township and part of the southern part of Reeves Township partially overlapped the subject property. The property was mapped at a scale of 1"=500' and subsequently two diamond drill holes totalling 1100

fect were completed. No economic mineralization was reported (T-154).

Inco Ltd., completed five diamond drill holes to test specific electromagnetic responses in southwestern Reeves Township (T-863). Hole 26700 which was drilled approximately 1.2km north of the Morin Property (north of claim 756559) and intersected greenstone and graphitic schist. Hole 26664 drilled near the south boundary of current claim P-849524 intersected metavolcanics, 5 feet of massive pyrite, and graphitic schist. Hole 26692 was drilled on the claim now covered by claim P-756577. Metabasalt, graphitic schist, and metasediments were encountered. Holes 26696 and 26698 were drilled on the claim now covered by current claim P-849701. Two zones of graphitic schist in sediments and sericite schist were encountered in hole 26696. 26698 was drilled down dip in sediments.

The program was completed in 1964 and was presumably geared toward base metal exploration.

Utah Mines Ltd., (T-2991) has completed magnetometer, VLF-EM soil sampling and some IP surveying over its claims which adjoin the Morin property to the west and north. In the course of completing their IP survey, Utah Mines mistakenly completed lines of survey on the Morin Property.

Strong IP responses were defined on both properties and Utah has since completed a drill program on its holdings. at least one drill hole was completed within 0.5km of the common west boundary.

Radio Hill Mines Ltd. drilled 3 holes in 1967 in the area now covered by current claim P-880526. Hole G-1 intersected intermediate and felsic volcanics, granites and a 20 foot section of graphitic schist. Hole G-2 encountered intermediate volcanics, granite and 20 feet of graphitic slate. The graphitic intersections in holes G-1 and G-2 are probably the same horizon. Hole G-



3 intersected intermediate and felsic volcanics and granites.

An old drill set up was located on claim P-899985 at grid location 19450W, 24400S. This may be the actual location of hole G-3 drilled by Radio Hill Mines in 1967. Holes G-1 and G-2 are probably within 200m to the north.

A collar dipping  $-50^{\circ}$  at azimuth  $180^{\circ}$  was located on claim P-849707, grid line 20400E, 5450N. There is no record of this hole in the assessment files.

#### WORK COMPLETED AND PERSONNEL.

A 99km grid was cut during September 1986 with a line spacing of 200m and stations picketed at 25m intervals by the contracting firm of Henry T. Gonzalez Exploration Services of Timmins. This grid was used to facilitate magnetometer and IP surveys as well as location control for geologic mapping, a trenching and stripping program utilized heavy equipment in order to explain anomalous geophysical trends. The following people worked on the property between September 15, 1986 and November 20, 1986, while in the employ of Durham Geological Services Inc.:

Bruce Barnes	geologist
Randy Maass	geologist
Peter Neelands	geologist
George Ross	labourer
Kieth Villeneuve	labourer
Kim Woytiuk	geologist

#### OVERBURDEN DRILLING

Pleistocene and recent deposits are varied, but obscure more than 90% of the bedrock across the property. A large esker

traverses the property in a northeast southwest direction along the east shore of Blackbill lake, and splays into a delta kame covering 5 square kilometers in the vicinity of B1+00, 10+00W - 20+00W, and then continues southwest through the intersection of Hwy. 101 and the Palomar Road. Overburden on this western part of the property typically consists of well sorted sands and gravel with depths up to 50m. Gravel pits on the property are located in the vicinity of 16+00E, 12+00N; 4+00W, 2+00N; 14+00W, 2+00S; 20+00W, 0+00 and just south of Hwy. 101 near the Palomar turn off.

The central part of the property i.e. east of Blackbill lake but west of the Groundhog River, varies sporadically between swampy peat deposits, some of which are greater than 5.0m depth, to shallow drift coverage of less than 1.0m. Typically the area is of less than 5.0m well sorted sandy ablation drift overlying a lodgement till which is less than 1.0m, of clay-silt composition with erratic as well as local boulder to gravel size inclusions.

East of the Groundhog River there is very little bedrock exposure so presumably overburden depth is greater than west of the river. A trench excavated on L 36E, 10+00N exposed 3.0m depth of varved, lacustrine clays severely contorted with ball and pillar features resultant of load casting with the underlying 1.5m of lodgement till. Trenches just 200m farther south revealed overburden depths of greater than 8.0m constituting two separate till sheets.

## GEOLOGY

### INTRODUCTION

Geological mapping programs completed by the Ontario government (Milne 1972, Harding 1937, Graham 1931, and Carlson

1967) all largely concur that the area is underlain by a suite of mafic to felsic metavolcanic and metasedimentary rocks of Archean age that have been folded, sheared and intruded by syntectonic bodies of peridotite, gabbro and a variety of felsic plutonic bodies.

The most recent Ontario government mapping project that relates directly to the Morin property is that completed by V. Milne in 1972. The project covered all of the claims located in Reeves and Penhorwood townships but did not cover the claims located in Muskego and Keith townships.

Milne (1972) indicates that the metavolcanic and metasedimentary schists and gneisses are isoclinally folded and intruded by sheets and pods of ultramafic igneous rocks. Most rock units in the area strike generally east-northeast and dip steeply. The volcanic-sedimentary sequence terminates against trondjhemitic and granodioritic intrusive complexes approximately 25km north of the Morin Property. The southern margin of the volcanic-sedimentary sequence is in contact with a granodioritic pluton approximately 6km south of the property.

The property covers several major lithologic contacts. From north to south, the property covers a suite of variably altered and sheared mafic volcanic rocks in contact with interbedded felsic tuffs, phyllites, schists and minor iron formation which are in turn in contact with clastic sediments dominated by phylitic, sericitic and chloritic schists. The sedimentary rocks which extend to the southern boundary of the property have been intruded by a subconformable body of feldspar porphyry that reaches a maximum width of approximately 1.5km, along the southern boundary of the property. To the west and north of its widest portion, the feldspar porphyry becomes a series of interdigitating narrow dikes within the clastic sedimentary sequence.

Carbonate and sericite alteration as well as quartz veining

are found in all rock types on the property with the exception of the mafic intrusives. Outcrop is sparse especially on the east and west extremities and overall exposure is less than 10%.

Regional metamorphic grade is generally greenschist facies with the exception of the contact aureoles of granitic intrusions.

#### MAFIC VOLCANICS

A wide belt of interlayered magnesium and iron tholeiites and calc-alkaline meta-volcanics cover the north half of the property. Predominately fine grained massive and pillowed subaqueous flows with interbedded mafic tuffs and fine clastic sediments, the unit varies locally from weakly to strongly foliated and is highly schistose especially near the contact with the clastic sediment unit to the south and close to the fault zone that is now represented by the path of the Groundhog River.

The majority of the mafic volcanics are aphanitic to fine grained light coloured chlorite-tremolite, non magnetic schist that is representative of the more magnesium rich variety of basalt. The iron tholeiites appear as dark coloured actinolite-hornblende schists and are often magnetic or have magnetic selvages when in the form of pillows. Modification of the light to dark rock distribution is caused by intense carbonatization that, especially near fault zones, all rocks are metamorphosed to dark green or grey chlorite and sericite carbonate frequently associated with rusty weathering fine grained iron-carbonate. In shear zones with widths of greater than 100 meters gradational halos of alteration were often noted with outside margins being a chlorite schist grading through chlorite-calcite to chlorite-sericite-ankerite to finally a predominately sericite schist.

#### FELSIC VOLCANICS

The least common of any single rock unit on the property,

felsic volcanics, namely a lapilli tuff, has been located in a single outcrop on the western part of the grid. Along strike just west of the property boundary there is an excellent exposure of this unit in a road out on Hwy. 101. Angular to subrounded felsic fragments are readily recognized on weathered surfaces where they are grey buff coloured in a grey green matrix. Where the fragments are stretched they are difficult to recognize on fresh surfaces, appearing as streaks of lighter grey or yellowish grey in the grey groundmass.

### CLASTIC SEDIMENTS

Approximately 40% of the property, this being the south portion, has been mapped as clastic meta-sediments including graywacke, arkose, conglomerate and slate. Interpretation of the magnetometer survey shows that the north central portion of the property may be a wide band of sediments included in the mafic volcanics. The graywackes are most common and are massive, very fine grained silty sediments that are consistently a dark grey on fresh surfaces and weather a lighter grey. Bedding is not easily recognized.

Conglomerates were identified in one outcrop on a dirt road between Hwy. 101 and the Groundhog River near grid coordinate 7400W. The pebbles are round or elongated parallel to the foliation. Pebble density is high and includes many medium grained granitic, fine grained felsic volcanic and graywacke fragments. The pebbly conglomerate is interbedded with the lithic graywacke that is essentially the same as the matrix of the conglomerate.

A very clean buff coloured arkose/quartzite was identified on L. 42400E, 7400N. A similar unit, in a trench on L. 8E, 8400N is 10m wide, carbonated and banded on both sides by chlorite

schist.

Slate, being very fine grained, dark gray, hard and siliceous was found throughout the sedimentary unit but seemed especially prevalent along the banks of the Groundhog River. A variation of this unit would be more aptly termed argillite, this being generally a softer, more friable rock prone to the effects of shearing. Graphitic argillite was located in several trenches throughout the sedimentary package as well as in an outcrop on Hwy. 101 near line 2W. These graphitic zones will explain some of the more prominent geophysical anomalies.

#### CHEMICAL SEDIMENTS

Cherty iron formation has explained several geophysical conductors. Trenching on L. 16400E, 15450N uncovered a banded chert with pyrite and magnetite. This may be coincident with a contact between mafic volcanics and clastic sediments to the north. Similar chemical sediments were found within the clastic sedimentary belt on L. 36400E, 9450N.

In general, iron formations were found to be narrow but often continuous with strike lengths often greater than 1km and possibly up to 5km. Cherty bands within the clastic sediments are generally 1m to 5m in width while in the mafic volcanics they are narrower with widths generally less than 1m. Many of the narrow magnetic zones within the mafic volcanics may be of metasomatic origin being sweated out of the iron rich tholeiites.

#### MAFIC INTRUSIVES

The youngest of any rock formations on the property, diabase lamprophyre dykes were found to cross all lithological units.

Virtually all dykes strike within 25° of north and very infrequently may trend easterly following the strike of the enclosing rock.

Lamprophyre was found in only two locations on the property, the best exposure being at a road on Hwy. 101 near grid L 24+00E. This rock is a very coarse grained dark brown and black, now calcareous and highly magnetic.

Diabase dykes are of typical textures, being dark gray, massive, equigranular and may be moderately magnetic. Trenching on L 16+00E, 14+50N uncovered a large diabase dyke being 10m-12m wide with a halo of highly weathered rotten rusty diabase that crumbles easily to a coarse sand. This particular dyke was traced over a strike length of 500m but geophysics indicate a probable strike length of several kilometers.

#### FELSIC INTRUSIVES

Quartz-feldspar porphyry and granodiorite intrude the sedimentary package seemingly in the form of east-west trending dykes in the vicinity of the Groundhog River south of Hwy. 101. More continuous exposure of this unit is found east of the river from the Bl. 0+00 to 5+00N. Quartz-feldspar porphyry outcrops only once along Hwy. 101 where it is seen intruding a slate near L 6+00W. These rocks are all characterized by the presence of medium to coarse grained euhedral white phenocrysts of plagioclase in a light to dark gray fine grained felsic groundmass. These rocks are commonly foliated.

An intrusion breccia is located on the base line near L 10+00E. This has a very aphanitic dark gray matrix containing angular to subangular felsic clasts. The origin of this unit is unknown but is related to the major fault along the Groundhog River.

#### SECONDARY CLEAVAGE

All rocks on the property, with the exception of the mafic

dykes, are foliated to some degree and the mafic volcanics can often only be identified as chlorite or sericite schist. This foliation is very constant and strikes between  $80^{\circ}$  and  $100^{\circ}$  while dips are vertical or very steep to the north.

A secondary cleavage that is probably related to east-west trending faults (Milne, 1972), forms a close spaced fracture cleavage that produce a crenulation on the primary schistosity. It is very flat lying and generally dips  $10^{\circ}$  to the north.

#### TRENCHING AND STRIPPING

A D-7G Caterpillar bulldozer with a 4m wide blade contracted through Alarie and Sons Ltd. of Timmins, arrived on the property the morning of Oct. 14/86. Stripping commenced immediately and continued until the dozer was stuck early the following day. A Caterpillar 225 backhoe with a one cubic meter bucket arrived Oct. 17/86 and often 8 hours the dozer was pulled from a 2.5m deep hole. The following 17 days of stripping and trenching proceeded much more smoothly with only 4 hours of down time due to mechanical breakdown or being stuck.

A total of 7km of roads were bulldozed to enable backhoe access to the areas to be trenched. Whenever the D-7 encountered outcrop or very shallow overburden the areas were stripped clean to allow geological mapping, especially to note variations of alteration sequences. Whenever possible the dozer would circumvent areas of large trees to accommodate environmental standards as well as to avoid the paying of stumpage fees to either the Ontario Ministry of Natural Resources or to the holder of the property timber rights.

Several attempts to reach specific targets were abandoned as the swampy terrain prevalent in the north as well as the south east areas were beyond the capabilities of the "Cat". The D-7 completed the work required on Oct. 30/86.

Two local persons were employed temporarily to wash selected outcrops with a Wajax Mark 3 high pressure water pump. Despite



the abundance of cedar swamp on the property there was a problem of attaining a suitable supply of water to facilitate washing needs. This often necessitated the use of the backhoe to dig water holes. The outcrops that were washed have revealed very broad shear zones and structures that could not be observed otherwise.

Twenty-four trenches were excavated, primarily to expose IP anomalies, in varying overburden depths of less than 1.0m to a maximum of 6.0m. Several trenches were abandoned without reaching bedrock due to deep overburden. A total of 1515 linear meters were trenched constituting the removal of some 16,000 cubic meters or 26,400 tonnes of overburden.

Of the twenty-four trenches, two were excavated for geologic reasons, the remainder for explaining geophysical anomalies. IP anomalies were definitely explained in nine trenches and possibly explained in seven. In trenches where no sulphide or graphite were observed, intense shearing and surface weathering may be masking these zones.

Trenching tested 14 of the 50 anomalous IP trends across the property and these were primarily located in the central part of the property between lines 4+00W and 24+00E. Two trenches are south of Hwy. 101, east of the Groundhog River on L. 36+00E. Overburden on the east and west ends of the property is too great to make trenching a cost effective exploration tool.

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- Tocci, E.W.  
 1924 Groundhog River Area; Ontario Department of Mines Vol. 33, pt. 6, p. 1-17. Accompanied by Map 33g, scale 1" = 1½ miles.

Ministry of Natural Resources Assessment Work Files: Timmins

File 2991	Utah Mines Ltd.
2547, 402	Noranda Exploration Ltd.
1599	Hanna Mining Corp.
2338	Dome Exploration Ltd.
1362	Radio Hill Mines Ltd.
860, 863	Inco
3	Maddin-Groundhog Mines
2867	Comstate
2459	Texasgulf
154	Brewis and White
84	McIntyre-Castle Prethewey

## GEOLOGIC CONDITIONS

- 1 MAFIC VOLCANIC
  - 1a light coloured chlorite-tremolite
  - 1b dark coloured actinolite-hornblende
  - 1c chlorite schist
  - 1d sericite-ankerite schist
  - 1e carbonate, calcite
  
- 2 INTERMEDIATE TO FELSIC VOLCANICS
  - 2b lapilli tuff
  
- 3 CLASTIC SEDIMENTS
  - 3a greywacke
  - 3b conglomerate
  - 3c slate
  - 3d chlorite schist, sericite schist
  
- 4 IRON FORMATION
  - 4a sulfide facies
  - 4b oxide facies
  
- 6 MAFIC DYKE, LAMPROPHYRE
  
- 7 FELSIC INTRUSIVE
  - 7a quartz-feldspar porphyry
  - 7b feldspar porphyry
  
- 10 DIABASE



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REPORT ON THE GEOPHYSICAL SURVEY  
on the  
UNIGOLD RESOURCES LTD.  
MORIN PROPERTY  
by  
Greg Hodges

UNIGOLD  
RESOURCES LTD.  
MORIN PROPERTY



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TABLE OF CONTENTS

	PAGE
INTRODUCTION.....	1
LOCATION AND ACCESS.....	1
CLAIM STATUS.....	1
REGIONAL GEOLOGY.....	4
PREVIOUS WORK.....	7
SURVEY PROCEDURES	
MAGNETICS.....	11
IP.....	13
MAX MIN.....	16
PERSONNEL AND EQUIPMENT.....	18
SURVEY STATISTICS.....	19
INTERPRETATION.....	19
CONCLUSIONS AND RECOMMENDATIONS.....	22
CERTIFICATION	
APPENDIX A: Equipment Specifications	
APPENDIX B: IP Sections	
LIST OF FIGURES	
Figure 1 Property location Regional	
Figure 2 Property location Local	
Figure 3 Claim Map	
MAPS (BACK POCKET)	
Magnetic Survey (4)	
Geophysical Compilation (4)	

## INTRODUCTION

During the period from September 17 to November 17, 1986, a geophysical survey was conducted on the 99 claim Morin Property of Unigold Resources Ltd. The survey consisted of magnetics, induced polarization and electromagnetics (MaxMin), and was conducted by Robert S. Middleton Exploration Services Inc. of P.O. Box 1637, 136 Cedar Street South, Timmins, Ontario.

The grid was completely surveyed with the magnetometer, almost completely with IP and the MaxMin was used to locate conductors in a few, specific areas.

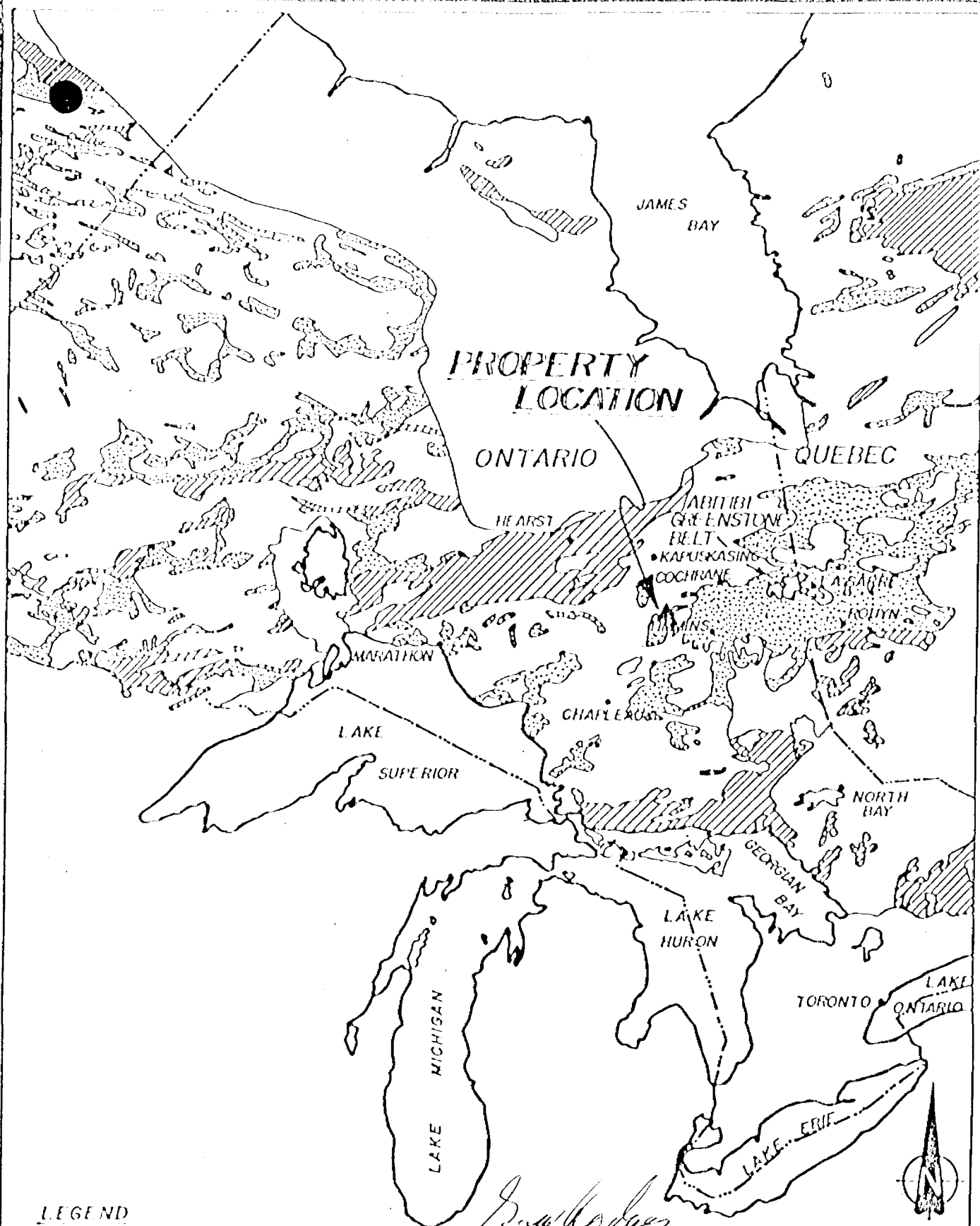
## LOCATION AND ACCESS

The property is located at the crossing of Highway 101 and the Groundhog River, approximately 90km southwest of Timmins, Ontario. Access on to the grid was mostly from Highway 101 and the old highway which runs roughly parallel north of the new highway. (Figures 1 and 2).

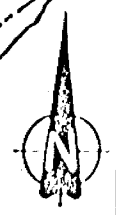
A gravel road from the highway to the railroad siding at Kukatush passes close to the southeast corner of the property.

## CLAIM STATUS




The property consists of 99 claims in the Ontario townships of Muskego, Keith, Reeves, and Penhorwood. The claims, all in the Porcupine Mining Division, are held by Unigold Resources Ltd.



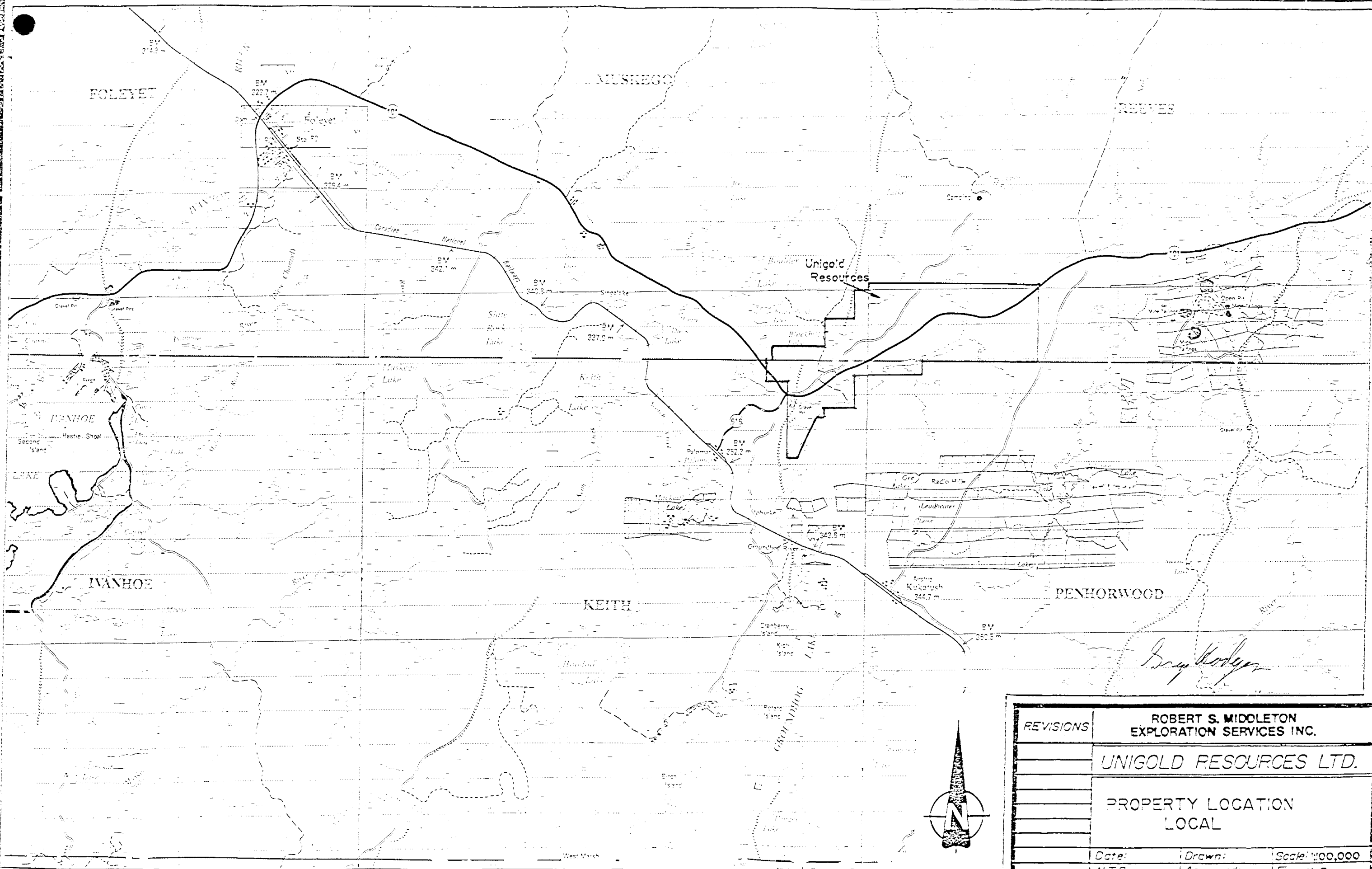
*Ray Hodges*



**LEGEND**

-  Archean greenstone and associated Sediments
-  Granitic Terrain
-  Archean Sediments, some volcanics and intrusions

Revisions	<b>ROBERT S. MIDDLETON EXPLORATION SERVICES INC.</b>	
	<b>UNIGOLD RESOURCES LTD.</b>	
	<b>PROPERTY LOCATION</b>	
	Date July 15/86	Drawn K.B.
	Approved E.D.	Figure 1



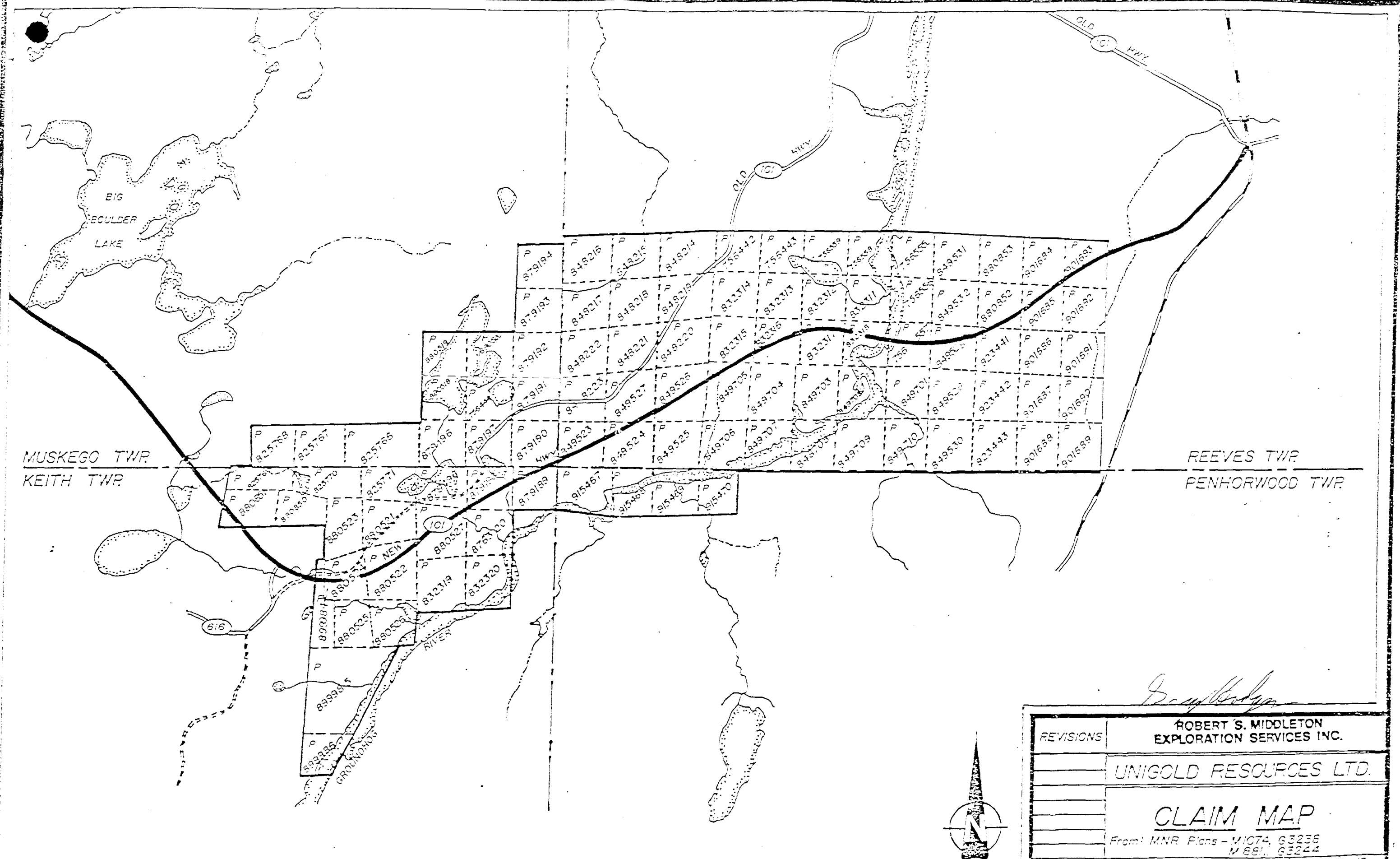
*Greg Hodges*

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	UNIGOLD RESOURCES LTD.		
	PROPERTY LOCATION LOCAL		
	Date:	Drawn:	Scale: 1:100,000
N.T.S.	Approved:	Figure: 2	



The claims are listed below, and shown on Figure 3.

<u>CLAIM NUMBER</u>	<u>TOWNSHIP</u>	<u>EXPIRY DATE</u>
P756444	Muskego	February 6, 1987
P825766	Muskego	October 29, 1986
P825767	Muskego	October 29, 1986
P825768	Muskego	October 29, 1986
P879190	Muskego	February 6, 1987
P879191	Muskego	February 6, 1987
P879192	Muskego	February 6, 1987
P879193	Muskego	February 6, 1987
P879194	Muskego	February 6, 1987
P879197	Muskego	February 6, 1987
P879198	Muskego	February 6, 1987
P880518	Muskego	February 6, 1987
P880519	Muskego	February 6, 1987
P880520	Muskego	February 6, 1987
P825769	Keith	October 29, 1986
P825770	Keith	October 29, 1986
P825771	Keith	October 29, 1986
P832319	Keith	February 11, 1987
P832320	Keith	February 11, 1987
P876320	Keith	February 11, 1987
P879189	Keith	February 11, 1987
P879195	Keith	February 11, 1987
P879196	Keith	February 11, 1987
P880521	Keith	February 11, 1987
P880522	Keith	February 11, 1987
P880523	Keith	February 11, 1987
P880524	Keith	February 11, 1987
P880525	Keith	February 11, 1987
P880526	Keith	February 11, 1987
P880527	Keith	February 11, 1987
P880850	Keith	February 18, 1987
P880851	Keith	February 18, 1987
P899984	Keith	March 25, 1987
P899985	Keith	March 25, 1987
P899986	Keith	March 25, 1987
P915467	Penhorwood	May 03, 1987
P915468	Penhorwood	May 03, 1987
P915469	Penhorwood	May 03, 1987
P915470	Penhorwood	May 03, 1987
P849527	Reeves	December 12, 1986
P849528	Reeves	December 12, 1986
P849529	Reeves	December 12, 1986
P849530	Reeves	December 12, 1986

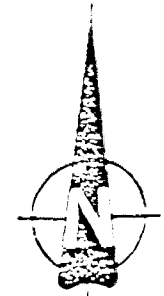


MUSKEGO TWP.  
KEITH TWP.

REEVES TWP.  
PENHORWOOD TWP.

*Robert S. Middleton*

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.
	UNIGOLD RESOURCES LTD.
	<b>CLAIM MAP</b>
	From: MNR Plans - M1074, 63238 M 881, 63244
	Date: July 15/86; Drawn: K.S. Scale: 1" = 1/2 mi.
	N.T.S. Approved: E.D. Figure: 3



CLAIM NUMBER	TOWNSHIP	EXPIRY DATE
P849531	Reeves	December 12, 1986
P849532	Reeves	December 12, 1986
P849701	Reeves	December 12, 1986
P849702	Reeves	December 12, 1986
P849703	Reeves	December 12, 1986
P849704	Reeves	December 12, 1986
P849705	Reeves	December 12, 1986
P849706	Reeves	December 12, 1986
P849707	Reeves	December 12, 1986
P849708	Reeves	December 12, 1986
P849709	Reeves	December 12, 1986
P849710	Reeves	December 12, 1986
P880852	Reeves	March 21, 1987
P880853	Reeves	March 21, 1987
P901684	Reeves	April 22, 1987
P901685	Reeves	April 22, 1987
P901686	Reeves	April 22, 1987
P901687	Reeves	April 22, 1987
P901688	Reeves	April 22, 1987
P901689	Reeves	April 22, 1987
P901690	Reeves	April 22, 1987
P901691	Reeves	April 22, 1987
P901692	Reeves	April 22, 1987
P901693	Reeves	April 22, 1987
P923441	Reeves	April 22, 1987
P923442	Reeves	April 22, 1987
P923443	Reeves	April 22, 1987
P756442	Reeves	February 04, 1987
P756443	Reeves	February 04, 1987
P756555	Reeves	February 04, 1987
P756556	Reeves	February 04, 1987
P756557	Reeves	February 04, 1987
P756558	Reeves	February 04, 1987
P756559	Reeves	February 04, 1987
P832311	Reeves	November 08, 1986
P832312	Reeves	November 08, 1986
P832313	Reeves	November 08, 1986
P832314	Reeves	November 08, 1986
P832315	Reeves	November 08, 1986
P832316	Reeves	November 08, 1986
P832317	Reeves	November 08, 1986
P832318	Reeves	November 08, 1986
P848214	Reeves	December 12, 1986
P848215	Reeves	December 12, 1986
P848216	Reeves	December 12, 1986
P848217	Reeves	December 12, 1986

CLAIM NUMBER	TOWNSHIP	EXPIRY DATE
P848218	Reeves	December 12, 1986
P848219	Reeves	December 12, 1986
P848220	Reeves	December 12, 1986
P848221	Reeves	December 12, 1986
P848222	Reeves	December 12, 1986
P848223	Reeves	December 12, 1986
P849523	Reeves	December 12, 1986
P849524	Reeves	December 12, 1986
P849525	Reeves	December 12, 1986
P849526	Reeves	December 12, 1986

GEOLOGY

The following is quoted from the Report on the Unigold Resources Ltd. Morin Property located in Reeves, Penhorwood, Keith and Muskego Townships, Porcupine Mining Division, Ontario by R. Bruce Durham.

"Geological mapping programs completed by the Ontario government (Milne 1972, Harding 1937, Graham 1931, and Carlson 1967) all largely concur that the area is underlain by a suite of mafic to felsic metavolcanic and metasedimentary rocks of Archean age that have been folded, sheared and intruded by syntectonic bodies of peridotite, gabbro and a variety of felsic plutonic bodies.

The most recent Ontario government mapping project that relates directly to the Morin property is that completed by V. Milne in 1972. The project covered all of the claims located in Reeves and Penhorwood townships but did not cover the claims

located in Muskego and Keith townships.

Milne (1972) indicates that the metavolcanic and metasedimentary schists and gneisses are isoclinally folded and intruded by sheets and pods of ultramafic igneous rocks. Most rock units in the area strike generally east-northeast and dip steeply. The volcanic-sedimentary sequence terminates against trondhemitic and granodioritic intrusive complexes approximately 25km north of the Morin Property. The southern margin of the volcanic-sedimentary sequence is in contact with a granodioritic pluton approximately 6km south of the property.

The property covers major lithologic contacts. From north to south, the property covers a suite of variably altered and sheared mafic volcanic rocks in contact with interbedded felsic tuffs, phyllites, schists and minor iron formation which are in turn in contact with elastic sediments dominated by phylitic, sericitic and chloritic schists. The sedimentary rocks which extend to the southern boundary of the property have been intruded by a subconformable body of feldspar porphyry that reaches a maximum width of approximately 1.5km, along the southern boundary of the property. To the west and north of its widest portion, the feldspar porphyry becomes a series of interdigitating narrow dikes within the elastic sedimentary sequence. While no conclusive evidence exists, Milne (1972) speculates that this porphyry body may be the extension of the

porphyry bodies located to the east of the Nat River and to the east of West Creek.

Carbonate and sericite alteration as well as quartz veining are found in all rock types on the property with the exception of the diabase dikes. Outcrop is sparse with the exception of the area along the Nat River. Overall exposure is estimated to be less than 10%.

Overburden cover is thought to be generally less than 30 meters and to consist mainly of moraine deposits and lake bottom silt and clays deposited under Lake Barlow-Ojibway.

Regional metamorphic grade is generally greenschist facies with the exception of the contact aureoles of granitic intrusions.

Lack of information precludes any attempt to decipher the presence or absence of folding in the subject area. While at least four fault directions were noted by Milne (1972), it is the author's opinion that the east-northeast faults which roughly parallel the Destor-Porcupine Fault in the Timmins area should receive particular attention.

In a general analysis of faulting in the area, Milne (1972) notes that:

" The major north-northwest-trending faults in Sewell and Kenogaming Townships correlate with the swarm of north-northwest-trending regional faults centred on Gogama and Shown on an OIM Compilation Map (Ginn et al. 1964). As indicated on the Compilation Map most of these faults produce a left-handed strike

separation in the "greenstone" belt south of Gogama. Regional Aeromagnetic Maps (GSC 1965) indicate a north-northwest-trending fault extending from Childerhouse Township through the northeast corner of Sewell Township and it is concluded that the Keefer Township metavolcanic belt is the left-hand offset equivalent of the Sewell Township volcanic rocks. Also the Keefer and Denton Townships metavolcanic belts may have been offset in similar fashion. If this hypothesis is correct then the Destor-Porcupine Fault could strike through Sewell and Reeves Townships and it is conceivable that the easterly trending faults in these townships are manifestations of the Destor-Porcupine Fault zone.

It is the author's opinion that at least one of these easterly trending faults traverses the Morin Property."

#### PREVIOUS WORK

The following is quoted from Durhams Report on the Unigold Resources Ltd., Morin Property.

"While prospecting in the area began in the late 19th century, and the area received considerable attention in the early 1900's as the Porcupine gold rush moved west, it was not until 1946 that a significant gold discovery was reported. The discovery, known as the Joburke Gold Mine led to a considerable amount of activity, however the activity was short lived. The property has seen two periods of production in more recent times. Production from 1973-1975 and 1979-1981 totaled 302,561 tons at an average grade of 0.09 ounces/ton gold.

A magnetite iron formation known as the Radio Hill was

investigated during the 1950's, for its iron content and is estimated to contain 158 million tons of material grading 20.8 percent magnetic iron.

Canadian Johns-Manville explored and mined the Reeves asbestos orebody from 1968 to the mid 1970's. The Reeves Mine was located in the southeastern part of Reeves Township.

A search of the Ministry of Northern Development and Mines files in Timmins revealed that while considerable work programs have been undertaken in the area, only sporadic incomplete programs have been completed in the immediate vicinity of the property and only part of that work was in search of gold mineralization. The Brewis and White claims which covered the northwest corner of Penhorwood Township and part of the southern part of Reeves Township partially overlapped the subject property. The property was mapped at a scale of 1"=500' and subsequently two diamond drill holes totalling 1100 feet were completed. No economic mineralization was reported (T-154).

McIntyre Porcupine Mines Ltd and Castle Trethway Mines Limited (T-84) completed geological mapping, a magnetic survey, a self potential survey and ten drill holes on a 105 claim group, most of which was located southeast of the subject property. It appears that the properties overlapped by roughly six claims in the extreme southeast corner of the Morin Property. A wide variety of unaltered rock types were encountered. They concluded



that:

"From the derived suboutcrop geological and structural picture of figure 5, it is evident that rock types and geological conditions favourable to gold deposition are present."

Inco Ltd., completed five diamond drill holes to test specific electromagnetic responses in southwestern Reeves Township (T-863). Hole 26700 which was drilled approximately 1.2km north of the Morin Property (north of claim 756559) and intersected greenstone and graphitic schist. Hole 26664 drilled near the south boundary of current claim P849524 intersected metavolcanics, 5 feet of massive pyrite, and graphitic schist. Hole 26692 was drilled on the claim now covered by claim P756577. Meta-basalt, graphitic schist, and metasediments were encountered. The program was completed in 1964 and presumably geared toward base metal exploration.

In 1970 Noranda Exploration (T-402) completed magnetometer and Crone Radem EM surveys over a group of seven claims located approximately 1km north of the north boundary of current claim P756443.

One drill hole was drilled in 1971 but no assay results were reported. The hole intersected highly contorted and variably carbonatized sericite schist, graphitic schist and andesite tuff.

Comstate Resources (T2867) holds a group of claims 2.5km northeast of the northeast corner of the subject property. Geological mapping and rock sampling have been completed to date

on the group of 9 claims.

Texas Gulf Inc. completed a magnetometer and VLF-EM surveys (T-2459) over a block of 8 claims that are now covered by the north central part of the Morin Property. Further work was recommended but the claims were allowed to lapse.

Utah Mines Ltd., (T-2991) has completed magnetometer, VLF-EM soil sampling and some IP surveying over its claims which adjoin the Morin Property to the west and north. In the course of completing their IP survey, Utah Mines mistakenly completed 3 lines of survey on the Morin Property.

Strong IP responses were defined on both properties and Utah has since completed a drill program on its holdings. At least one drill hole was completed within 0.5km of the common west boundary.

Noranda Exploration Co., (T-402) completed magnetometer and electromagnetic surveys (VEM) on a 16 claim group in southeast Muskego Township in 1970. Three conductive zones were identified but no further work was completed.

Aladdin Groundhog Gold Mines Ltd., completed 2300 feet of drilling in three holes during the winter of 1946-47 (T-3) from the ice on Palomar Lake in northeastern Keith Township. According to N. Hogg, ultramafic, andesitic and graphitic rocks were encountered.

Dome Mines Ltd., drilled three diamond drill holes west of

the southern tip of the Morin Property in 1980. No significant results were obtained.

Inco Ltd., (T-860) completed 8 short drill holes on a group of small properties approximately 1.5km west of the southern tip of the Morin Property in Keith Township, during 1964. The program totalled 1805 feet. The nearest hole to the Morin Property intersected greenstone, graphitic schist and greywacke.

No attempt was made to describe the work carried out to evaluate the potential of the Radio Hill iron formation since iron is not the element of interest on the subject property."

#### SURVEY PROCEDURE

##### MAGNETICS

##### Theory

The magnetic method is based on measuring alteration in the shape and magnitude of the earth's naturally occurring magnetic field caused by changes in the magnetization of the rocks in the earth.

These changes in magnetization are due mainly to the presence of the magnetic minerals, of which the most common is magnetite, and to a lesser extent ilmenite, pyrrhotite, and some less common minerals.

Magnetic anomalies in the earth's field are caused by changes in two types of magnetization: induced and remanent

(permanent). Induced magnetization is caused by the magnetic field being altered and enhanced by increases in the magnetic susceptibility of the rocks, which is a function of the concentration of the magnetic minerals.

Remanent magnetism is independent of the earth's magnetic field, and is the permanent magnetization of the magnetic particles (magnetite, etc.) in the rock. This is created when these particles orient themselves parallel to the ambient field when cooling. This magnetization may not be in the same direction as the present earth's field, due to changes in the orientation of the rock or the field.

The most common method of measuring the total magnetic field in ground exploration is with a proton precession magnetometer. This device measures the effect of the magnetic field on the magnetic dipole of hydrogen protons. This dipole is caused by the "spin" of the proton, and in a magnetometer these dipoles in a sample of hydrogen-rich fluid are oriented parallel to a magnetic field applied by an electric coil surrounding the sample. After this magnetic field is removed, the dipoles begin to precess (wobble) around their orientation under the influence of the ambient earth's magnetic field. The frequency of this precession is proportional to the earth's magnetic field intensity.

### Field Method

The magnetics data were collected with a proton precession magnetometer, which measures the absolute value of the total magnetic field of the earth to an accuracy of  $\pm 1$  nTesla. The magnetometer is carried down the survey line by a single operator, with the sensor mounted on a short pole to remove it from the surface geologic noise. Readings are normally taken at 25 m intervals, and at 12.5 m intervals where the operator observes a high gradient (anomaly).

The readings are corrected for changes in the earth's total field (diurnal drift) by measuring and recording the drift with a stationary (base station) magnetometer. This recorded drift is then applied to the data as a correction.

### INDUCED POLARIZATION/RESISTIVITY

#### Theory

The induced polarization (IP) and resistivity exploration methods are electrical methods based on measuring the response of the earth to an applied direct current.

The principle is to apply a known electric current to the earth, and measure the electric potential created by it at the survey location. The resistivity, a bulk property of the rock itself, is calculated from the difference between the applied current and the measured potential, corrected for the geometry of the current and potential electrode configuration.

The induced polarization measurement is based on the "over-voltage" effect. Most of the electric current carried by the earth is conducted by the flow of ions in the solutions filling the pore spaces in the rock. At the surface of any metallic particle in the path of current flow, the ionic flow in the solution is changed to an electronic flow in the metal. In the process of the change, an electric charge of trapped ions is built up at the surface of the metal, storing a small voltage. If the voltage increases, the apparent resistance of the rock also increases. If the applied current flow is decreased or stopped, the voltage will create a potential in the same direction to the original applied current.

In time domain induced polarization the applied current is abruptly stopped, and the potential created by the over-voltage effect is measured over time as it quickly decays. The definition of chargeability is:

$$M = \frac{V(t = \infty) - V(t = 0)}{V(t = \infty)}$$

where  $V(t = 0)$  is the voltage at turnoff, and  $V(t = \infty)$  is the late-time voltage. This is usually measured over a certain time period after turn-off as an integral of voltage over time, corrected for the length of the time period, and normalised to the voltage at time 0. It is usually expressed in millivolts per volt (mV/V).

The over-voltage charge takes time to build-up or decay, so that if the applied current is caused to oscillate more and more frequently, the apparent resistance will decrease, as the over-voltage does not have time to build at higher frequencies. This effect is used to measure the IP effect in frequency domain IP surveys, wherein the current is applied at two or more frequencies, and the "percent frequency effect" (PFE) is calculated from the change in resistivities (P) between the different frequencies.

$$\text{PFE} = \frac{P(\text{low freq}) - P(\text{high freq})}{P(\text{high freq})} \times 100 \%$$

Although not identical, for most purposes the PFE is approximately equal to the chargeability.

Because the IP effect responds to effects on small metallic particles, it is particularly useful for detecting disseminated metallic minerals. Also because of this, it will respond strongly to the "membrane polarisation" created by the electric charges resident on clay particles or layered or fibrous minerals.

#### Field Method

The survey was conducted using a dipole-dipole array with a dipole length of 25 m and array spacings of  $n = 1, 2, 3, 4$  dipoles. This array configuration involves having two dipoles separated in turn by each 'n' interval moving in-line down each

survey line. One dipole is the receiver measuring  $V_p$ , the potential, and the other dipole is the transmitter.

For this survey the measurements were taken in the time domain, so the transmitted current was a bipolar on-off square wave with each on or off lasting two seconds. Measurements of resistivity and chargeability were taken.

### MAX-MIN II

#### Theory

The Max-Min II is a frequency domain, horizontal loop electromagnetic (HLLM) system, based on measuring the response of conductors to a transmitted, time varying electromagnetic field.

The transmitted, or primary EM field is a sinusoidally varying field at any of five different frequencies. This field induces an electromotive force, (emf), or voltage, in any conductor through which the field passes. This is defined by:

$$\oint \mathbf{E} \cdot d\mathbf{l} = - \frac{d\Phi}{dt} \quad (\text{the Faraday Induction Principle})$$

where  $E$  is the electric field strength in volts/metre (and so  $\oint \mathbf{E} \cdot d\mathbf{l}$  is the emf around a closed loop) and  $\Phi$  is the magnetic flux through the conductor loop. This emf causes a "secondary" current to flow in the conductor in turn generating a secondary electromagnetic field.

This changing secondary field induces an emf in the receiver coil (by the Faraday law) at the same frequency, but which differs from the primary field in magnitude and phase. The



difference in phase (the phase angle) is a function of the conductance of the conductor(s), both the target and the overburden and host rock. The magnitude of the secondary is also dependant on the conductance, and also on the dimensions, depth, and geometry of the target, as well as on the interference from overburden and the host rock.

These two parameters (phase angle and magnitude) are measured by measuring the strength of the secondary field in two components: the real field or that part "in-phase" with the primary field; and the imaginary field, or that part in "quadrature" or  $90^\circ$  out of phase from the primary field.

The magnitude and phase angle of the response is also a function of the frequency of the primary field. A higher frequency field generates a stronger response to weaker conductors, but a lower frequency tends to pass through weak conductors and penetrate to a greater depth. The lower frequency also tends to energise the full thickness of a conductor, and gives a better measure of its true conductivity-thickness product (conductance).

For these reasons two or more frequencies are usually used; the lower for penetration and accurate measure of good conductors, and the higher frequency for strong response to weak conductors.

Distinction between conductive targets, overburden, and host

rock responses are made by studying the shape of the secondary field, and the difference in the frequency responses.

The transmitted primary field also creates an emf in the receiver coil, which is much stronger than the secondary, and which must be corrected for by the receiver. This is done by electronically creating an emf in the receiver, whose magnitude is determined by the distance from receiver to transmitter as set on the receiver, and whose phase is derived from the receiver via an interconnecting wire.

#### Field Method

The Max-Min II survey was carried out in the "maximum coupled" mode (horizontal co-planar). The transmitter and receiver are carried in-line down the survey line separated by a constant distance (in this case 150 m) with the receiver leading. Three transmitter frequencies were used: 444 Hz, 1777 Hz and 3555 Hz. The transmitter and receiver are connected by a cable, for phase reference and operator communication.

#### PERSONNEL AND EQUIPMENT

Robert S. Middleton provided four men to complete the induced polarization survey, one man for the magnetic survey, and two men for the electromagnetic survey. The IP was completed using a Scintrex IPR-II receiver and a Scintrex IPT-1 transmitter, the magnetics survey was carried out with an EDA

Omi IV Tie-Line magnetometer and an EDA PPM 400 Recording Base Station magnetometer. The EM was completed with an Apex Parametrics Max Min II.

Specifications for these instruments are included in Appendix A.

Transportation for the crews was provided by Robert S. Middleton Exploration. The crew was accomodated in a camp set up on the grid by Middleton Exploration, who also provided a cook.

#### SURVEY STATISTICS

A total of 100km of survey lines were cut on the grid, all of which were surveyed with the magnetometer. The induced polarization surveying required 48 production days to complete. Five days were required for mobilization and demobilization, including camp set-up and take-down (the camp was also used by the Durham Geological Services geologists) and nine days were lost to inclement weather.

#### INTERPRETATION

The Morin Property survey results are dominated by the band of iron formations trending east-west across the grid between the baseline and the north edge. This band is very complex, composed of many small bands offset by numerous faults. The induced polarization survey showed numerous east-west trending

chargeability anomalies, and many, moderate or weak, isolated anomalies. There were many clear resistivity contrasts mapped, which can often be used to identify lithologic contacts, but care should be taken in using these for geologic mapping, as they often reflect changes in the overburden depth as well.

A limited amount of Max Min surveying was conducted, which detected a few previously undetected anomalies, as well as some of those already detected by the IP survey.

The induced polarization anomalies are shown on the compilation map, with an indication of chargeability for each. Those anomalies which appear to be due to continuous features have been connected as such on the compilation sheet.

These bodies show great variation in conductivity and chargeability along their length, so the association of one anomaly with the next is not definite, but should be re-examined with the detailed geology map as a guide.

The major iron formations are also indicated on the compilation map. There are also many small magnetic anomalies that cross one or two lines.

The chargeability anomalies which are of most interest are those in areas where alteration may have taken place, such as where faults cross iron formations. The alteration zones are often made apparent by absence of the magnetic anomaly (due to reduction of the magnetite) in a region contiguous with iron

formations. These zones are particularly interesting if they show anomalous chargeabilities.

It has been reported that there are graphitic conductors on the grid, and care should be taken to consider geologic environment and evidence from trenching, etc., in defining graphite mineralizations before they are drilled. (Contrary to some publications, there is not yet a practical, reliable system for distinguishing graphites from sulphides with induced polarization data collected in field conditions).

One of the more interesting anomalies is on Line 800E at 750N; a wide chargeable zone in an area with some magnetic anomalies, cut by a major fault. Also interesting, for their proximity to iron formations are the anomalies at 1050N on L3600E, at 450N on L200W at 1500N on L1600E, at 1000N on L1800E, and 1000N on L3600.

The strong IP anomaly from 500N on L4800E to 750N on L3000E is associated with a strong conductivity anomaly, as are the anomalies at 650N on L1000E to 500N on L1800E, and 25S on L400W to 100S on L400E. The very south ends of lines 1000E, 2000E(@550N), 2200E and 2400E are also conductive.

The Max Min survey detected the conductors at 0N on L400W and 37S on L200W and L0, at 700N on L1000E. A weak Max Min anomaly occurred on the highly chargeable, conductive IP anomaly at 125N on L200W. The conductor at 925N on L200W had only a weak

chargeable response.

CONCLUSIONS AND RECOMMENDATIONS

The induced polarization survey outlined many anomalies of varying chargeability and conductivity.

The strongest anomalies in the IP occur just north of the Groundhog River, but the field crew has reported that graphite was observed in samples from old trenches near the river. This suggests that these strong conductors may be graphites, as well as the conductor between L3000E and L4800E.

Those other conductors described as being associated with the iron formations, such as 750N on L800E should be investigated if the geology is favourable.

It is recommended that the project continue with Phase III as described in R. Bruce Durhams report on the property, namely:

3,000 ft. of HQ diamond drilling	
@ \$23/foot all inclusive	\$ 69,000.00
Assaying	5,000.00
Core logging, splitting, and supervision	10,000.00
Report, drafting, consulting	8,000.00
SUBTOTAL	\$ 92,000.00
Contingency 10%	9,200.00
TOTAL PHASE III PROGRAM	\$101,200.00

After completion of Phase III drilling, further drilling would be recommended based on the results to date.

Respectfully submitted

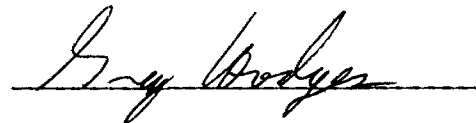
  
 Greg Hodges

CERTIFICATION

I, D. Greg Hodges, of 136 Cedar Street South, in the city of Timmins, Province of Ontario, certify as follows concerning my report on the Morin property in Muskego, Keith, Reeves, and Penhorwood Townships, Province of Ontario and dated January 23, 1987:

1. I am a member in good standing of the Society of Exploration Geophysicists
2. I am a graduate of Queen's University at Kingston, Ontario, with a B.Sc. (Hons.) Geological Sciences with Physics, obtained in 1980.
3. I have been practising in Canada, and occasionally in the United States, Europe, and Australia for the past six years.
4. I have no direct interest in the properties, leases, or securities of Unigold Resources Limited, nor do I expect to receive any.
5. The attached report is a product of:
  - a) Examination of data included in the report which was collected on the property concerned.

Dated this January 23, 1987  
Timmins, Ontario

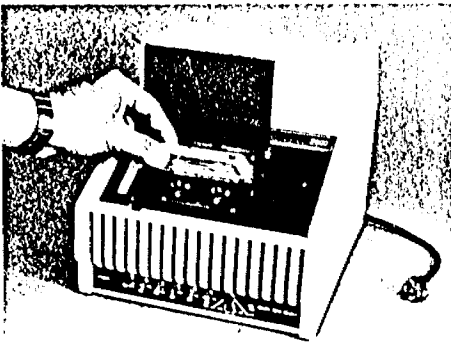
  
D. Greg Hodges, Geophysicist

A P P E N D I X A

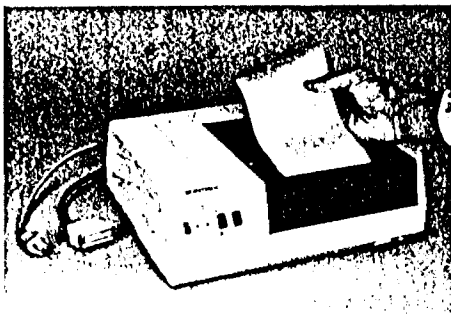


# Technical Description of the IPR-11 Broadband Time Domain IP Receiver

Input Potential Dipoles	1 to 6 simultaneously
Input Impedance	4 megohms
Input Voltage (Vp) Range	100 microvolts to 6 volts for measurement. Zener diode protection up to 50 V
Automatic SP Bucking Range	±1.5 V
Chargeability (M) Range	0 to 300 mV/V (mils or 0/00)
Absolute Accuracy of Vp, SP and M	Vp; ±3% of reading for Vp > 100 microvolts SP; ±3% of SP bucking range M; ±3% of reading or minimum ±0.5m V/V
Resolution of Vp, SP and M	Vp; 1 m V above 100 m V approaching 1 microvolt at 100 microvolt SP; 1 m V M; 0.1 m V/V except for M <sub>0</sub> to M <sub>3</sub> in 0.2 second receive time where resolution is 0.4 m V/V.
IP Transient Program	Ten transient windows per input dipole. After a delay from current off of t, first four windows each have a width of t, next three windows each have a width of 6t and last three windows each have a width of 12t. The total measuring time is therefore 58t. t can be set at 3, 15, 30 or 60 milliseconds for nominal total receive times of 0.2, 1, 2 and 4 seconds.
Vp Integration Time	In 0.2 and 1 second receive time modes; 0.51 sec In 2 second mode; 1.02 sec In 4 second mode; 2.04 sec
Transmitter Timing	Equal on and off times with polarity change each half cycle. On/off times of 1, 2, 4 or 8 seconds with ±2.5% accuracy are required.
Header Capacity	Up to 17 four digit headers can be stored with each observation.
Data Memory Capacity	Depends on how many dipoles are recorded with each header. If four header items are used with 6 dipoles of SP, Vp and 10 M windows each, then about 200 dipole measurements can be stored. Up to three Optional Data Memory Expansion Blocks are available, each with a capacity of about 200 dipoles.
External Circuit Check	Checks up to six dipoles simultaneously using a 31 Hz square wave and readout on front panel meters, in range of 0 to 200 k ohms.
Filtering	RF filter, spheric spike removal; switchable 50 or 60 Hz notch filters, low pass filters which are automatically removed from the circuit in the 0.2 sec receive time.
Internal Calibrator	1000 mV of SP, 200 mV of Vp and 24.3 mV/V of M provided in 2 sec pulses.
Digital Display	Two, 4 digit LCD displays. One presents data, either measured or manually entered by the operator. The second display; 1) indicates codes identifying the data shown on the first display, and 2) shows alarm codes indicating errors.
Analog Meters	Six meters for; 1) checking external circuit res- istance, and 2) monitoring input signals.
Digital Data Output	RS-232C compatible, 7 bit ASCII, no parity, serial data output for communication with a digital printer, tape recorder or modem.



Industry standard cassette recorders such as this MFE-2500 can be connected directly to the IPR-11.



DP-4 Digital Printer

# Technical Description of the IPR-11 Broadband Time Domain IP Receiver

<b>Standard Rechargeable Power Supply</b>	Eight Eveready CH4 rechargeable NiCad D cells provide approximately 15 hours of continuous operation at 25°C. Supplied with a battery charger, suitable for 110/230 V, 50 to 400 Hz, 10 W.
<b>Disposable Battery Power Supply</b>	At 25°C, about 40 hours of continuous operation are obtained from 8 Eveready E95 or equivalent alkaline D cells.  At 25°C, about 16 hours of continuous operation are obtained from 8 Eveready 1150 or equivalent carbon-zinc D cells.
<b>Dimensions</b>	345 mm x 250 mm x 300 mm, including lid.
<b>Weight</b>	10.5 kg, including batteries.
<b>Operating Temperature Range</b>	-20 to +55°C, limited by display.
<b>Storage Temperature Range</b>	-40 to +60°C.
<b>Standard Items</b>	Console with lid and set of rechargeable batteries, 2 copies of manual, battery charger.
<b>Optional Items</b>	Multipole Potential Cables, Data Memory Expansion Blocks, Statistical Analysis Program, Crystal Clock, SPECTRUM Program, Digital Printer, Cassette Tape Recorder, Modem.
<b>Shipping Weight</b>	25 kg includes reusable wooden shipping case.

## SCINTREX

222 Snidercroft Road  
Concord Ontario Canada  
L4K 1B5

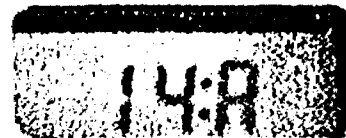
Telephone: (416) 669-2280  
Cable: Geoscint Toronto  
Telex: 06-964570

Geophysical and Geochemical  
Instrumentation and Services

DATA



INDEX | VARIABLE

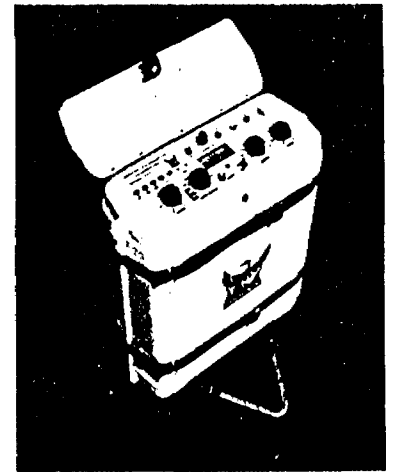


*IPR-11 LCD displays, actual size*

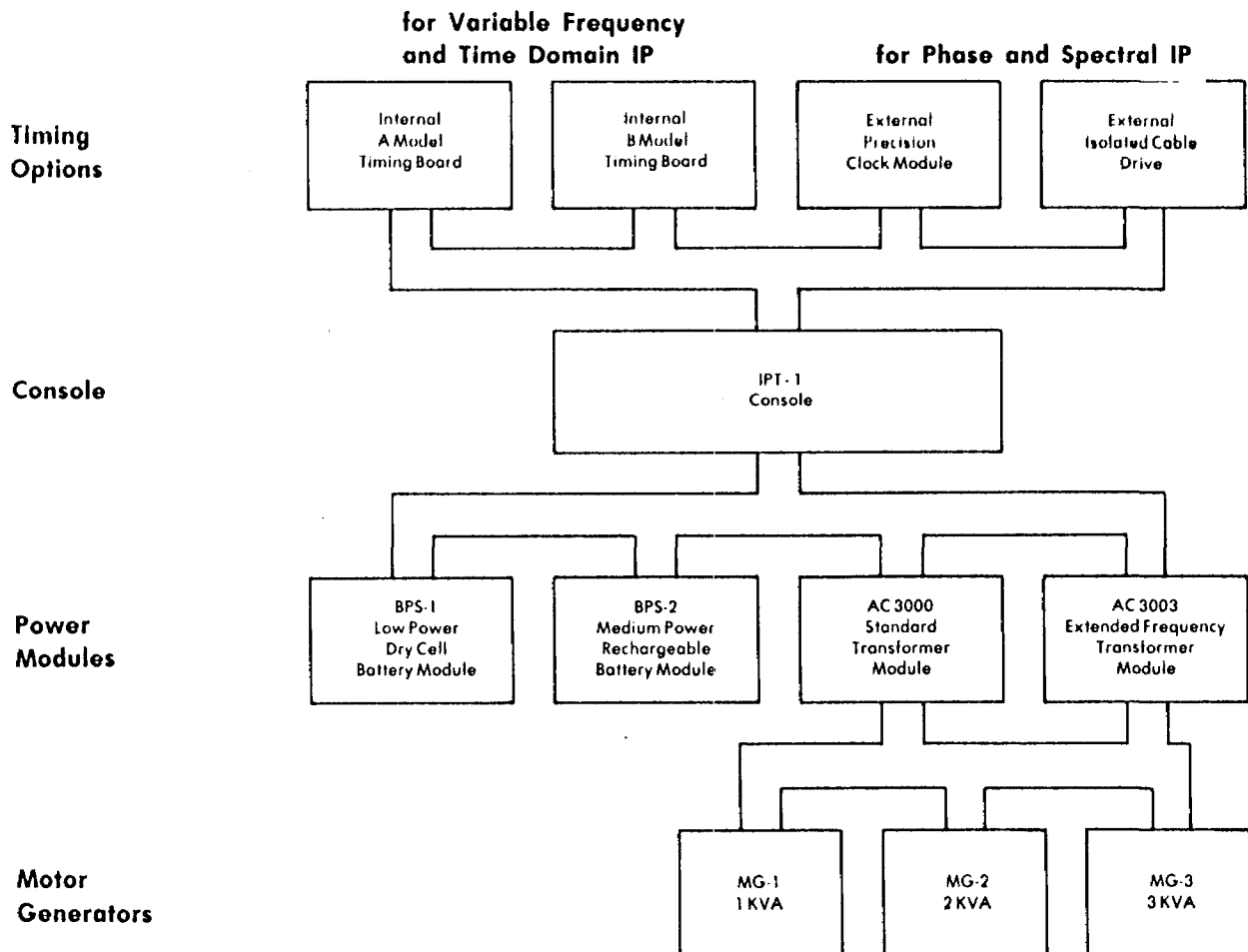
# IPT-1

## Variable Frequency, Time Domain and Phase IP Transmitter

- **Reliable:** Backed by twenty years experience in the design and worldwide operation of induced polarization and resistivity equipment
- **Versatile:** Can be used for resistivity, variable frequency IP, time domain IP or phase angle IP measurements
- **Stable:** Excellent current regulation
- **Lightweight, portable**
- **Wide selection of power sources**
- **Low cost**



### Transmitter Configurations



### PHOENIX GEOPHYSICS LIMITED

Geophysical Consulting and Contracting, Instrument Manufacture, Sale and Lease.

Head Office: 200 Yorkland Blvd., Willowdale, Ontario, Canada M2J 1R5  
Tel.: (416) 493-6350 Telex: 06-986856 Cable: PHEXCO TORONTO

Vancouver Office: 214 - 744 West Hastings Street, Vancouver, B.C., Canada V6C 1A6  
Tel.: (604) 669-1070

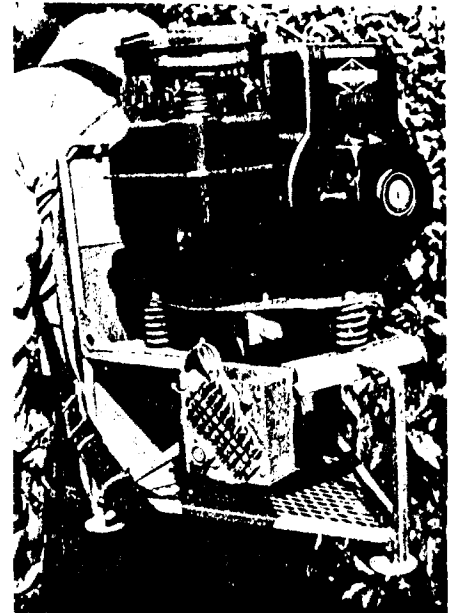
Denver Office: 4891 Independence St., Suite 270, Wheat Ridge, Colorado, 80033, U.S.A.  
Tel.: (303) 425-9393 Telex: 450690

## Motor Generators

There are three motor generators, differing in weight and power, which can be used with the transformer power modules. All three supply three phase, 400 Hz (350 to 600 Hz), 60V (45V to 80V). The voltage is regulated by feedback from the transmitter.

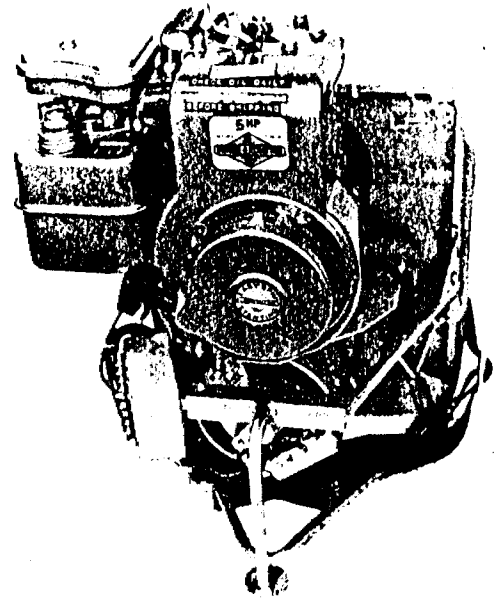
### MG - 1:

This lightweight unit is designed for easy portability in areas of moderately high resistivity. It is well suited for massive sulfide exploration in Northern Canada, Europe and Asia, as well as general IP and resistivity surveys in rugged, mountainous areas around the world. The motor is a 4-cycle Briggs and Stratton which produces 3 HP at 3600 rpm. The dimensions of the unit, including packframe, are 40 x 45 x 60 (16 x 18 x 24 in). Total weight is 25 kg (55 lb).



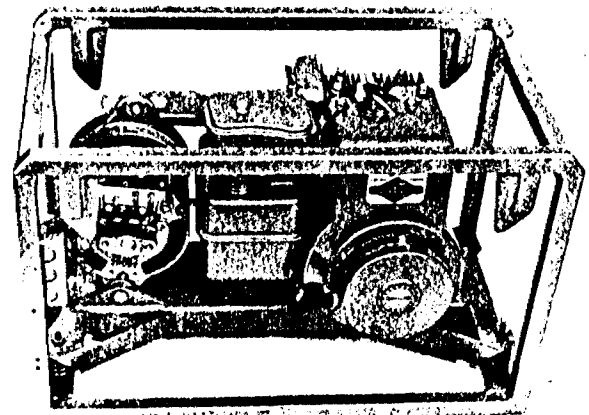
### MG - 2:

2KVA motor generator. This versatile unit is adequate for the vast majority of IP and resistivity surveys conducted worldwide. It is light enough to be carried by one man, yet powerful enough for most survey requirements. The motor is a 4-cycle Briggs and Stratton which produces 5 HP at 3600 rpm. The dimensions of the unit, including packframe, are 40 x 45 x 60 cm (16 x 18 x 24 in). Total weight is 34 kg (75 lb).



### MG - 3:

3KVA motor generator. This two-man portable unit is designed for surveys in areas which require additional power. The motor is a 4-cycle Briggs and Stratton which produces 8 HP at 3600 rpm. The unit is mounted in a square frame with dimensions 40 x 48 x 75 cm (16 x 19 x 29 in). Total weight is 55 kg (120 lb).



## Timing Options

### INTERNAL TIMING BOARD

There are three available internal timing boards. Both have the same internally mounted crystal oscillator with a stability of 50 PPM over the temperature range -40°C to +60°C.

	STANDARD FREQUENCY SERIES	OPTIONAL FREQUENCY SERIES (change link on board)
<b>Model A :</b>	Frequency domain mode ±DC, .062, .125, .25, 1, 2 and 4 Hz. Time domain mode 2 sec +, 2 sec off, 2 sec -, 2 sec off. Simultaneous transmission mode .25 and 4.0 Hz standard, other pairs available.	Frequency domain mode ±DC, .078, .156, .313, 1.25, 2.5, and 5.0 Hz. Time domain mode 1.6 sec +, 1.6 sec off, 1.6 sec -, 1.6 sec off. Simultaneous transmission mode .313 and 5.0 Hz standard, other pairs available.

**Model B :** The main difference between this timing board and the model A board is that the duty cycle is variable. Frequency domain operation is obtained by setting the duty cycle to 100% and selecting any of nine binary frequencies from 1/64 Hz to 4 Hz. Various time domain waveforms may be obtained by choosing any of the nine frequencies and a duty cycle of 25%, 50% or 75%. The standard 2 sec +, 2 sec off, 2 sec -, 2 sec off time domain waveform is chosen by selecting a duty cycle of 50% and a frequency of .125 Hz.

**Model C :** Time domain: 1, 2, 4, 8 second cycle. Frequency domain: 0.1, 0.3, 1.0, 3.0 Hz.

### EXTERNAL HIGH PRECISION CRYSTAL CLOCKS

The IPT-1 may be driven by external high precision crystal clock modules such as the CL-1 and transmitter driver or CL-2 and transmitter driver. These clock modules were designed for use as a time reference between the IPT-1 or IPT-2 transmitters and the Phoenix IPV-2 phase IP receiver. The aging rate of the CL-1 clock module is  $5 \times 10^{-10}$ /day (0.11 mrad/hr at 1 Hz) and the stability of the CL-2 clock module is  $10^{-7}$ /day (2.26 mrad/hr at 1 Hz). These clock modules weigh 7.5 kg., however space is provided for as much as 5 kg of additional internal batteries for operating the CL-1 oven heated clocks all day at -40°C. Clock modules produced by other manufacturers of induced polarization receivers are also compatible with the IPT-1.

### EXTERNAL ISOLATED CABLE DRIVE

The isolated cable drive option allows the IPT-1 to be driven by the timing circuitry of the IPV-3 spectral IP receiver. The maximum distance allowed between transmitter and receiver is 500m. For efficient spectral IP field surveying, the distance between the transmitter and receiver is always maintained at one electrode interval. Thus the maximum convenient electrode interval, using the isolated cable drive option, is 500m. The IPV-3 measures the current plus six voltage dipoles ( $n=1,6$ ) simultaneously.

## Console

<b>Ammeter Ranges :</b>	30 mA, 100 mA, 300 mA, 1A, 3A and 10A full scale.
<b>Meter Display :</b>	A meter function switch selects the display of current level, regulation status, input frequency, output voltage, control voltage and line voltage. An optional digital display presents all of the above, plus external circuit resistance.
<b>Current Regulation :</b>	The change in output current is less than 0.2% for a 10% change in input voltage or electrode impedance.
<b>Protection :</b>	The current is turned off automatically if it exceeds 150% full scale or if it is less than 5% full scale.



## Internal Power Modules

### BPS-1 DRY CELL BATTERY POWER MODULE

- Output Voltage** : 90V, 180V and 360V.
- Output Current** : 1 mA to 1A maximum.
- Output Power** : Recommended maximum output power is 30 watts. Absolute maximum output power is 100 watts.
- Power Supply** : 8x45V dry cell batteries (Eveready 482, Mallory 202 or equivalent). Normal field operation, with low output power, results in an average battery life expectancy of one month. Operation with the absolute maximum output power results in much shorter battery life.
- Control Supply** : 4 x 6V lantern batteries (Eveready 409, Mallory 908 or equivalent) connected in series/parallel are used to provide the 40 to 70 mA at 12V required for the control circuitry. Average battery life expectancy is six months.
- Operating Temperature** : 0°C to +60°C.

### BPS-2 RECHARGEABLE BATTERY POWER MODULE

- Output Voltage** : 50V, 106V, 212V, 425V, and 850V.
- Output Current** : 3 mA to 3A.
- Output Power** : Maximum output power is 300 watts. Above this output power a protective cut-out is engaged to prevent battery and circuit damage.
- Batteries** : 4 x 12V rechargeable gell cell batteries connected in series/parallel have a capacity of 9 A-hr. External batteries (such as car or motorcycle batteries) may also be used. A special cord and plug are provided for this mode of operation. An adaptor cord connects the 12V batteries in parallel with the 12V charging unit.
- Operating Temperature** : -40°C to +60°C. Below 0°C the capacity of the batteries is significantly reduced (by 70% at -40°C).

### AC 3000 TRANSFORMER POWER MODULE

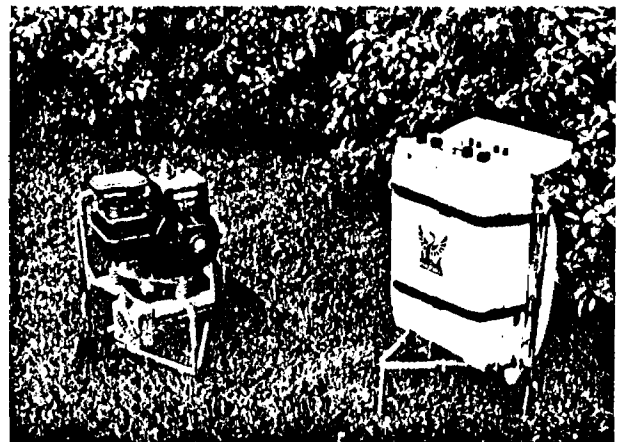
- Output Voltage** : 75V, 150V, 300V, 600V and 1200V.
- Output Current** : 3 mA to 10A.
- Output Power** : Maximum continuous output power is  
3KW with MG-3 motor generator,  
2KW with MG-2 motor generator and  
1KW with MG-1 motor generator.
- Input Power** : Three phase, 400 Hz (350 to 1000 Hz),  
60V (50V to 80V) is standard.  
Three phase, 400 Hz (350 to 1000 Hz),  
120V (100V to 160V) is optional.
- Current Regulation** : Achieved by feedback to the alternator of the motor generator unit.
- Operating Temperature** : -40°C to +60°C.
- Thermal Protection** : Thermostat turns off at 65°C and turns back on at 55°C internal temperature.

### AC 3003 TRANSFORMER POWER MODULE

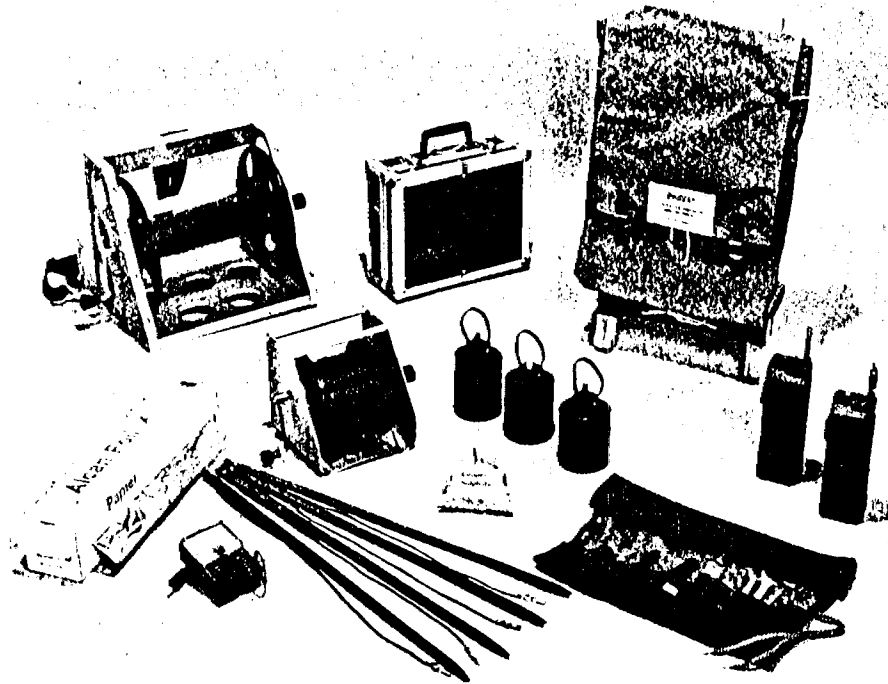
- Same as AC 3000 except for:
- Output Voltage** : 44V, 87V, 175V, 350V and 700V.
- Frequency Range** : DC to 3000 Hz under external drive (all other power modules have a maximum frequency of 5 Hz).
- (Note: AC 3003 is not intended for extended time domain operation)

## General

- Dimensions** : 20 x 40 x 55 cm (9 x 16 x 22 in).
- Weight** : 13 kg (29 lb) with BPS-1.  
13 kg (29 lb) with BPS-2.  
17 kg (37 lb) with AC-3000.  
18 kg (40 lb) with AC-3003.
- Standard Accessories** : Pack frame, manual, At least one of the four possible power modules is required. The transformer power modules in turn require one of the three external 1KVA, 2KVA, 3KVA, motor generators and a connecting cable.

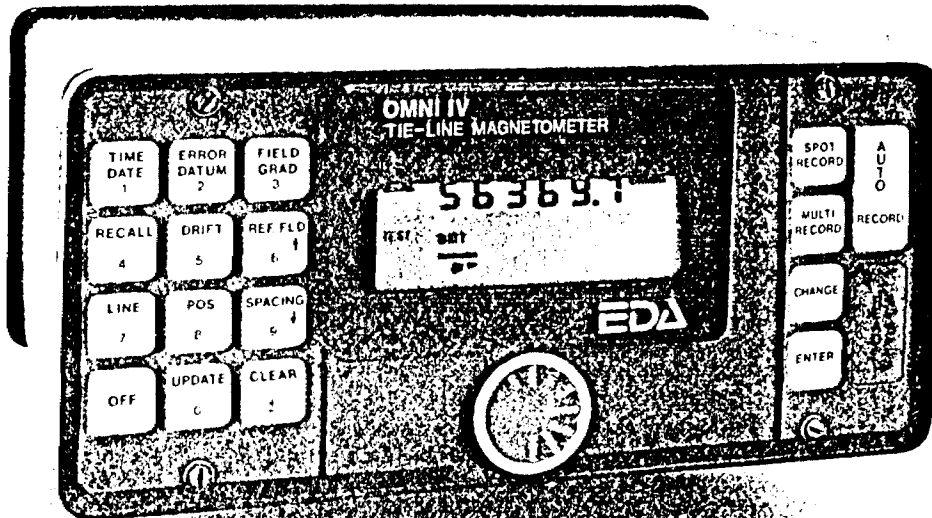


## Survey Accessories



<b>Accessory Packsack</b>	:	Trapper Nelson #3 packboard with packsack.
<b>Receiver Transport Case</b>	:	Aluminum, foam lined, 13 x 32 x 44 cm.
<b>Stake Electrodes</b>	:	Mild steel rods with hard tapered end, 1.6 cm diameter, 75 cm or 120 cm long.
<b>Foil Electrode Material</b>	:	Heavy duty industrial aluminum foil, 0.0025 cm x 46 cm x 137 m.
<b>Field Wire</b>	:	Black, low friction, polyethylene plus nylon jacket. Four copper plus three steel strands. Tensile strength 40 kg. Total resistance 76 ohm/km. External diameter 0.213 cm.
<b>Geo Reel</b>	:	Two speed aluminum winder with packstraps, 35 x 40 x 50 cm.
<b>Geo Reel Spool</b>	:	Capacity for 3000m of field wire.
<b>Speedwinder</b>	:	Aluminum winder, 20 x 25 x 30 cm.
<b>Speedwinder Spool</b>	:	Capacity for 600m of field wire.
<b>Porous Pots</b>	:	Plastic with porous asbestos bottom. Coiled copper wire makes contact with saturated copper sulfate solution.
<b>Copper Sulfate</b>	:	450 g.
<b>Multimeter</b>	:	Resistance, voltage and current.
<b>Tool Kit</b>	:	Soldering iron, wrenches, screwdrivers.
<b>Radios</b>	:	Transmitter-receivers.

# OMNI IV "Tie-Line" Magnetometer



- Four Magnetometers in One
- Self Correcting for Diurnal Variations
- Reduced Instrumentation Requirements
- 25% Weight Reduction
- User Friendly Keypad Operation
- Universal Computer Interface
- Comprehensive Software Packages



## Specifications

Dynamic Range	18,000 to 110,000 gammas. Roll-over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
Automatic Fine Tuning	± 15% relative to ambient field strength of last stored value
Display Resolution	0.1 gamma
Processing Sensitivity	± 0.02 gamma
Statistical Error Resolution	0.01 gamma
Absolute Accuracy	± 1 gamma at 50,000 gammas at 23°C ± 2 gamma over total temperature range
Standard Memory Capacity	
Total Field or Gradient	1,200 data blocks or sets of readings
Tie-Line Points	100 data blocks or sets of readings
Base Station	5,000 data blocks or sets of readings
Display	Custom-designed, ruggedized liquid crystal display with an operating temperature range from -40°C to +55°C. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
RS 232 Serial I/O Interface	2400 baud, 8 data bits, 2 stop bits, no parity
Gradient Tolerance	6,000 gammas per meter (field proven)
Test Mode	A. Diagnostic testing (data and programmable memory) B. Self Test (hardware)
Sensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy.
Gradient Sensors	0.5 meter sensor separation (standard), normalized to gammas/meter. Optional 1.0 meter sensor separation available. Horizontal sensors optional.
Sensor Cable	Remains flexible in temperature range specified, includes strain-relief connector
Cycling Time (Base Station Mode)	Programmable from 5 seconds up to 60 minutes in 1 second increments
Operating Environmental Range	-40°C to +55°C; 0-100% relative humidity; weatherproof
Power Supply	Non-magnetic rechargeable sealed lead-acid battery cartridge or belt; rechargeable NiCad or Disposable battery cartridge or belt; or 12V DC power source option for base station operation.
Battery Cartridge/Belt Life	2,000 to 5,000 readings, for sealed lead acid power supply, depending upon ambient temperature and rate of readings
Weights and Dimensions	
Instrument Console Only	2.8 kg, 238 x 150 x 250mm
NiCad or Alkaline Battery Cartridge	1.2 kg, 235 x 105 x 90mm
NiCad or Alkaline Battery Belt	1.2 kg, 540 x 100 x 40mm
Lead-Acid Battery Cartridge	1.8 kg, 235 x 105 x 90mm
Lead-Acid Battery Belt	1.8 kg, 540 x 100 x 40mm
Sensor	1.2 kg, 56mm diameter x 200mm
Gradient Sensor (0.5 m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0 m separation - optional)	2.2 kg, 56mm diameter x 1300mm
Standard System Complement	Instrument console; sensor; 3-meter cable, aluminum sectional sensor staff, power supply, harness assembly, operations manual.
Base Station Option	Standard system plus 30 meter cable
Gradiometer Option	Standard system plus 0.5 meter sensor

EDA Instruments Inc  
4 Thorncliffe Park Drive  
Toronto, Ontario  
Canada M4H 1H1  
Telex: 06 23222 EDA TOR  
Cable: Instruments Toronto  
(416) 425 7800

In U.S.A.  
EDA Instruments Inc.  
5151 Ward Road  
Wheat Ridge, Colorado  
U.S.A. 80033  
(303) 422 9112

Printed in Canada

A P P E N D I X B

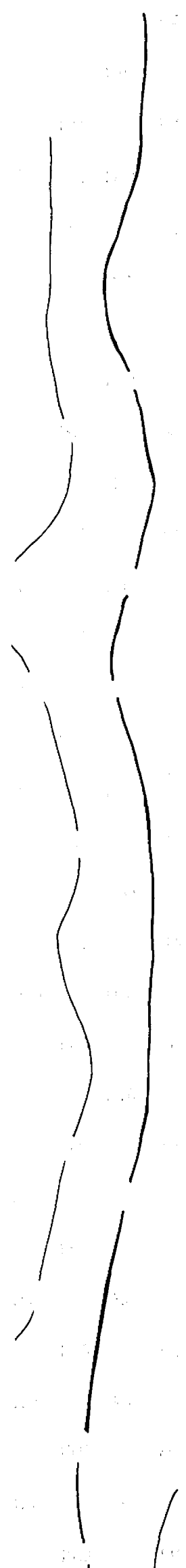
SCALE 1:10000

RESISTIVITY  
mhos/cm

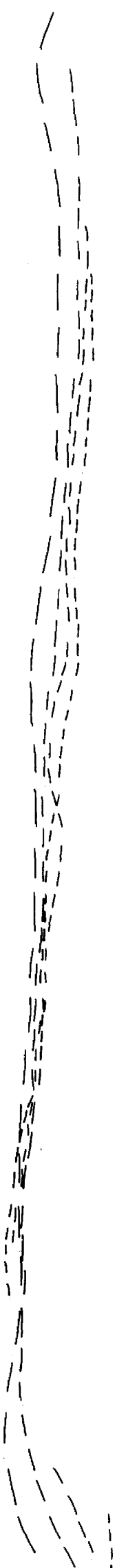
DEPTH  
meters

DEPTH  
meters

ROAD AT 1300 N



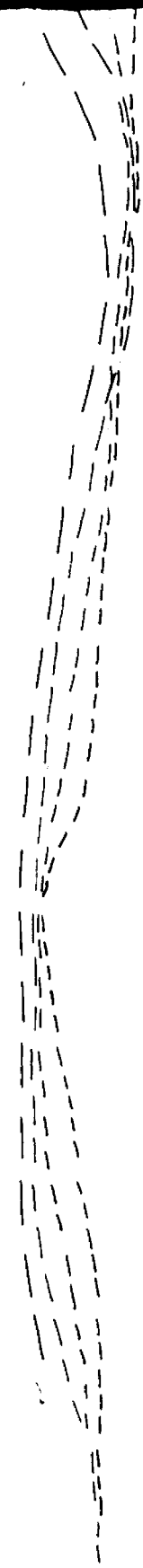
- \* 1325N
- \* 1350N
- \* 1375N
- \* 1400N
- \* 1425N
- \* 1450N
- \* 1475N
- \* 1500N
- \* 1525N
- \* 1550N
- \* 1575N
- \* 1600N
- \* 1625N
- \* 1650N
- \* 1675N



TRACK AT 1812 N



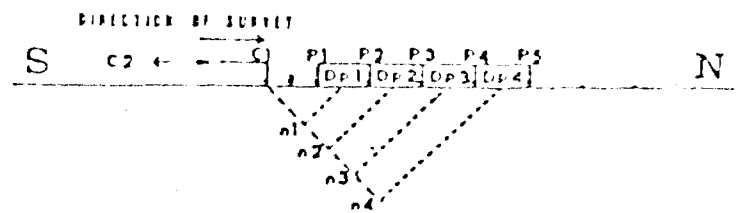
1700N  
 1725N  
 1750N  
 1775N  
 1800N  
 1825N  
 1850N  
 1875N  
 1900N  
 1925N  
 1950N  
 1975N  
 2000N



1. The purpose of this survey is to determine the elevation of the track at 1812 N. The survey was conducted on 10/10/19. The track is located at 1812 N, 100 W. The elevation of the track is 1812 N. The survey was conducted by the following personnel: [Name], [Name], [Name]. The survey was conducted using the following equipment: [Equipment], [Equipment], [Equipment]. The survey was conducted in accordance with the following procedure: [Procedure]. The survey was conducted in accordance with the following procedure: [Procedure].

2. The purpose of this survey is to determine the elevation of the track at 1812 N. The survey was conducted on 10/10/19. The track is located at 1812 N, 100 W. The elevation of the track is 1812 N. The survey was conducted by the following personnel: [Name], [Name], [Name]. The survey was conducted using the following equipment: [Equipment], [Equipment], [Equipment]. The survey was conducted in accordance with the following procedure: [Procedure].

3. The purpose of this survey is to determine the elevation of the track at 1812 N. The survey was conducted on 10/10/19. The track is located at 1812 N, 100 W. The elevation of the track is 1812 N. The survey was conducted by the following personnel: [Name], [Name], [Name]. The survey was conducted using the following equipment: [Equipment], [Equipment], [Equipment]. The survey was conducted in accordance with the following procedure: [Procedure].



*Greg K. [Signature]*

SCALE : 1 : 1250

RESISTIVITY  
(ohm - metres)

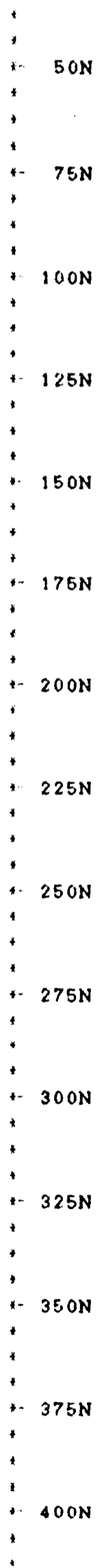
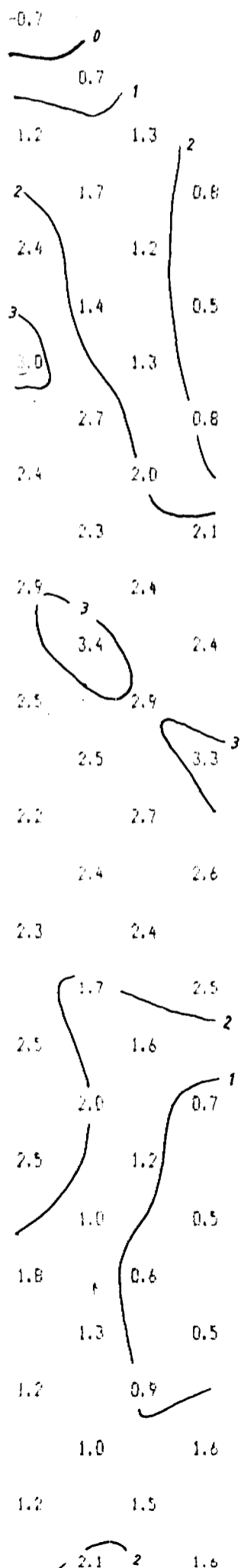
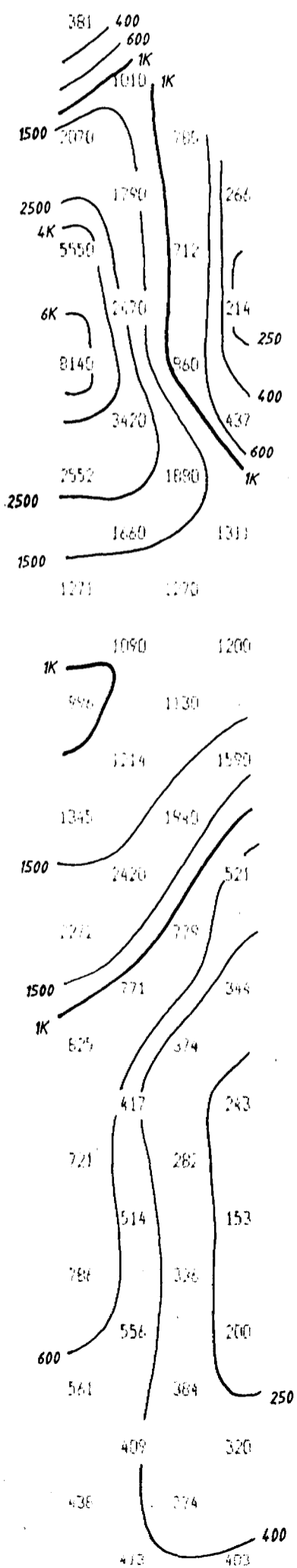
CHARGEABILITY  
(milliseconds)

CHARGEABILITY PROFILE

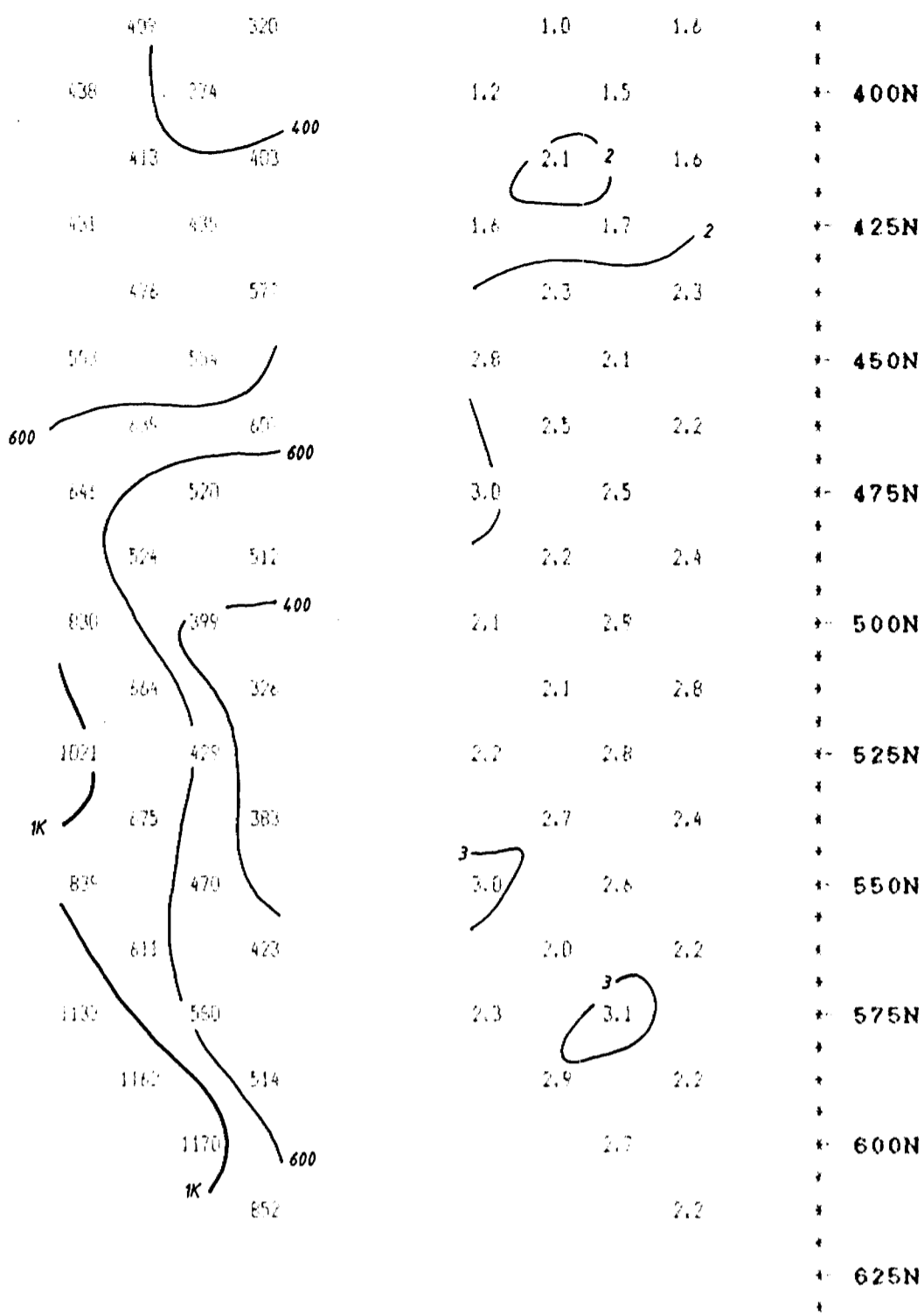
N 3      N 1  
N 4      N 2

N 3      N 1  
\*      \*  
N 4      N 2  
\*      \*

-10      -5      0      5      10      15      20

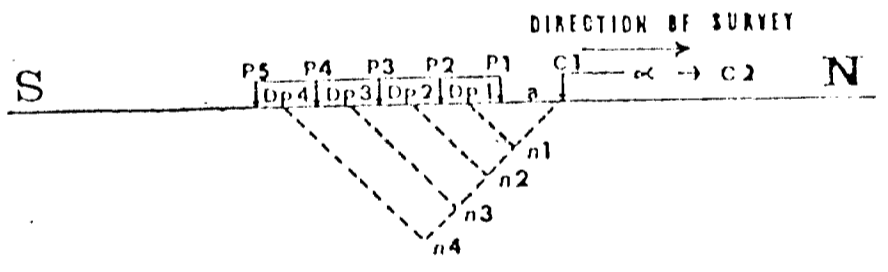


CREEK AT 308 N



Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 21/10/86  
 Operator : RRJ  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted



\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

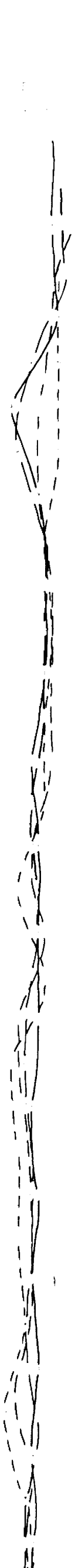
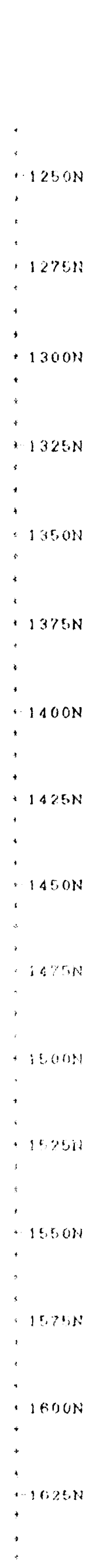
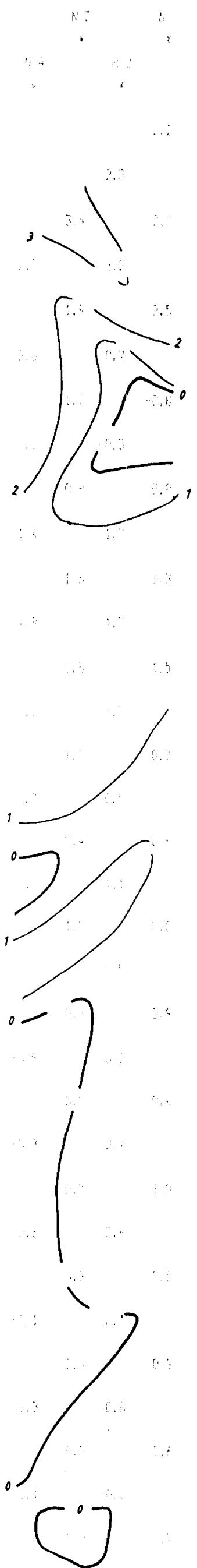
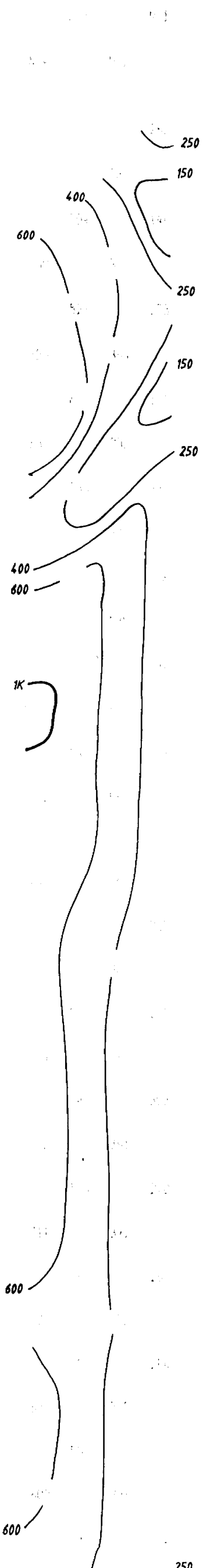
*Handwritten signature*

IP Pseudosections for N = 1 to 4  
 1m Spacing = 25 M

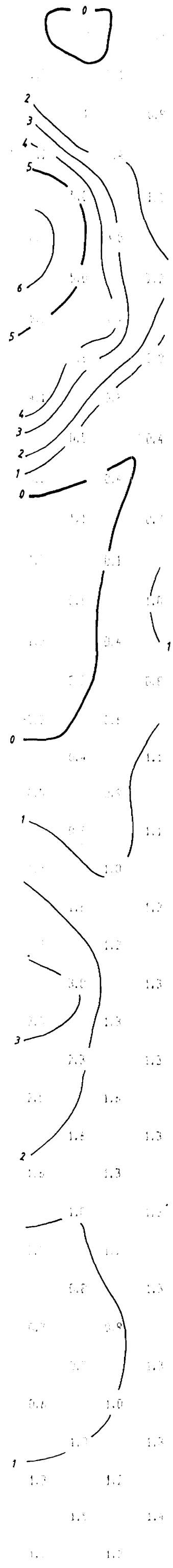
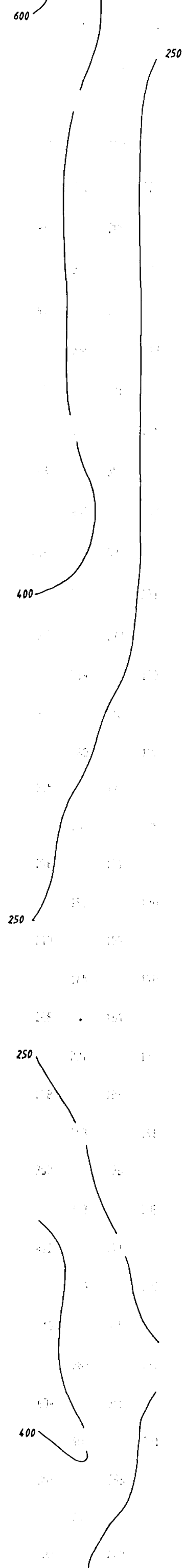
TEMPERATURE  
(degrees Celsius)

CHLOROPHYLL  
(micrograms)

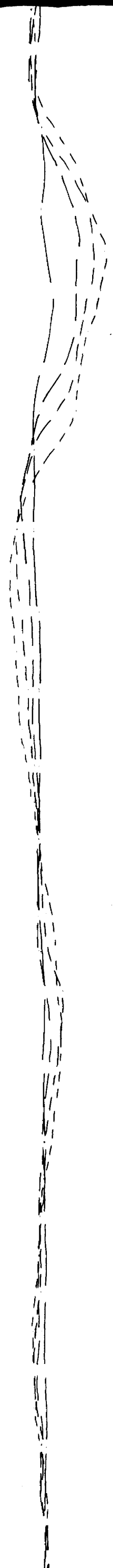
SARASOTA, FLORIDA



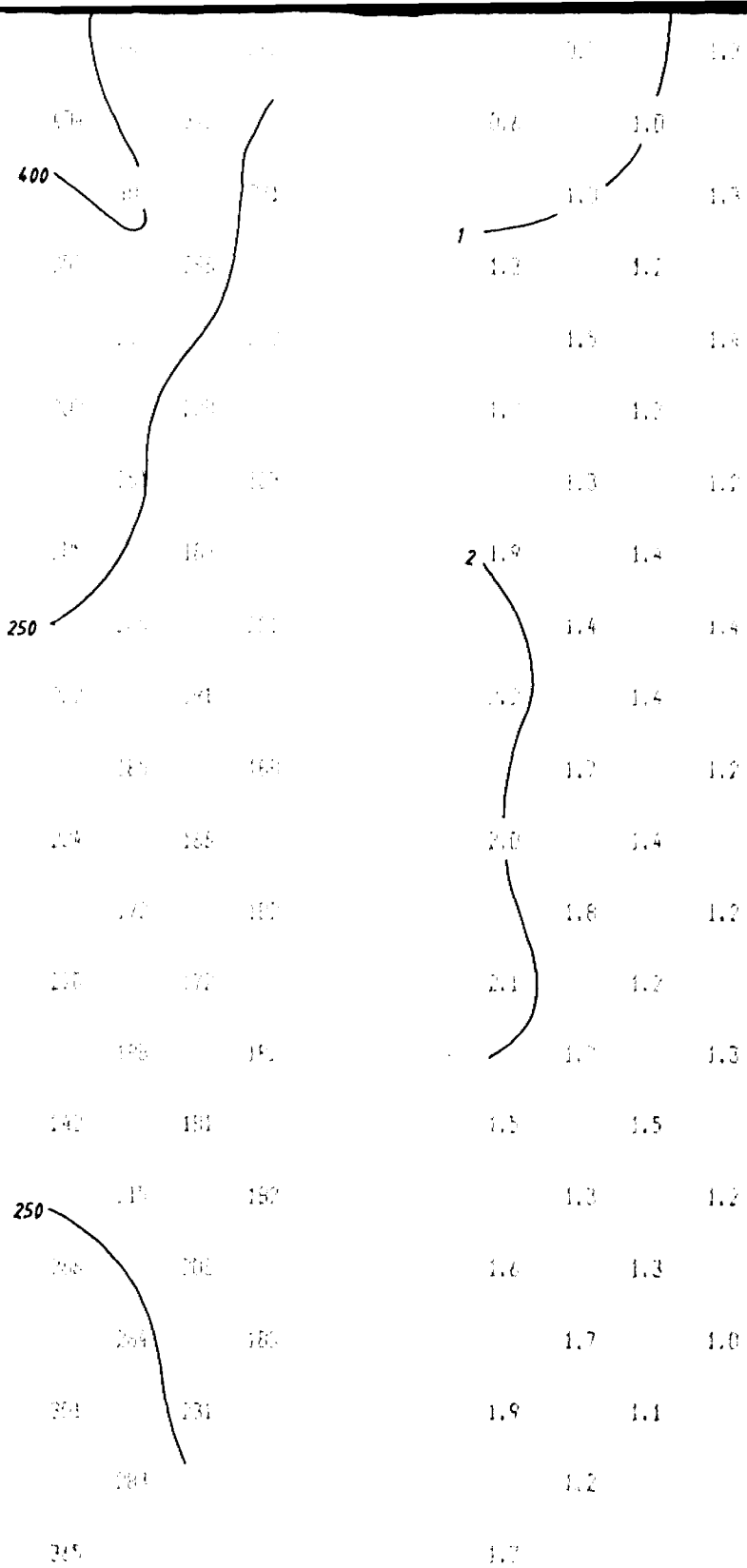
OLD ROAD AT 1810 N



1650N  
 1675N  
 1700N  
 1725N  
 1750N  
 1775N  
 1800N  
 1825N  
 1850N  
 1875N  
 1900N  
 1925N  
 1950N  
 1975N  
 2000N  
 2025N  
 2050N  
 2075N  
 2100N  
 2125N



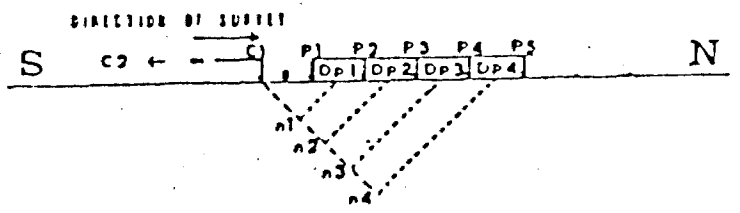




\* 2075N  
 \*  
 \* 2100N  
 \*  
 \* 2125N  
 \*  
 \* 2150N  
 \*  
 \* 2175N  
 \*  
 \* 2200N  
 \*  
 \* 2225N  
 \*  
 \* 2250N  
 \*  
 \* 2275N  
 \*  
 \* 2300N  
 \*  
 \* 2325N  
 \*

SMALL POND \*  
 OLD ROAD AT 2375 N 1

Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.  
  
 Date of Survey : 22/10/86  
 Operator : CDJ  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINIREX IFR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted



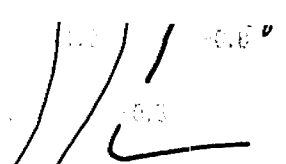
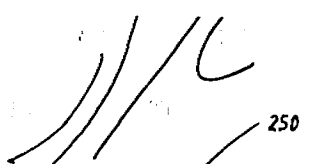
\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

*Dry Ridge*

IP Pseudosections for N = 1 to 4

(a) Spacing = 25 M

LINE 36 E



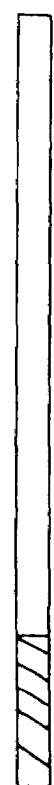
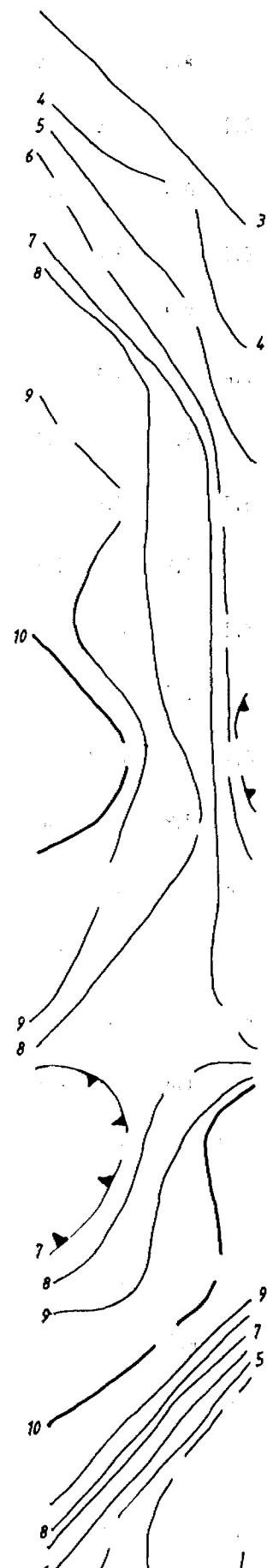
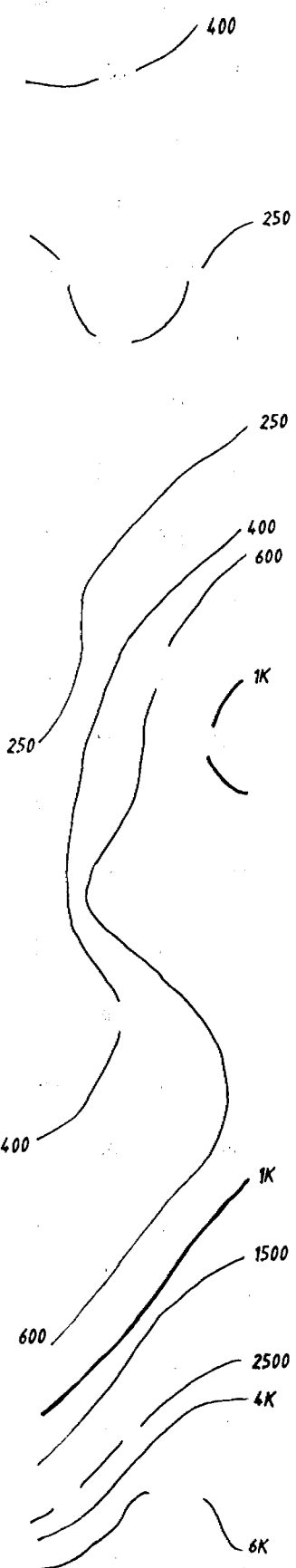
\* 1325N \*

SCALE = 1 : 1250

1950-1951  
1952-1953

MAP EASTLY  
WIND-ROCK

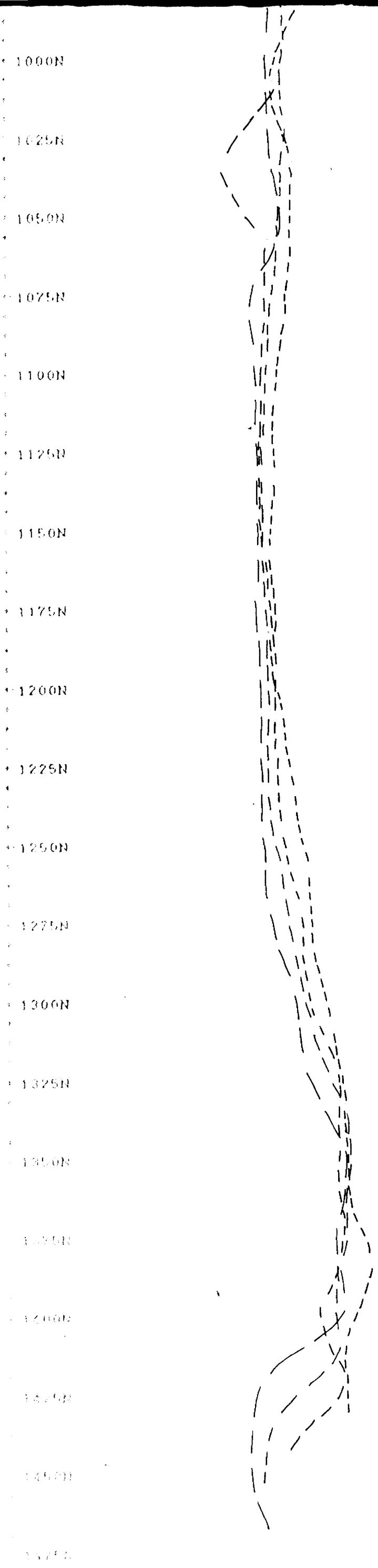
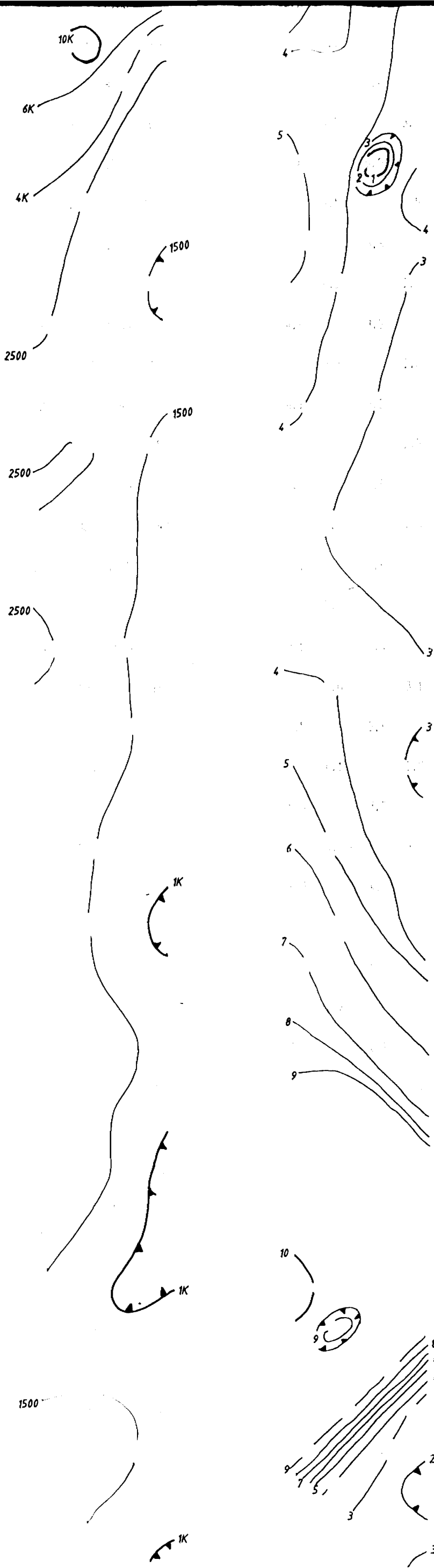
1954-1955



625N  
650N  
675N  
700N  
725N  
750N  
775N  
800N  
825N  
850N  
875N  
900N  
925N  
950N  
975N



ROAD AT 1300 N

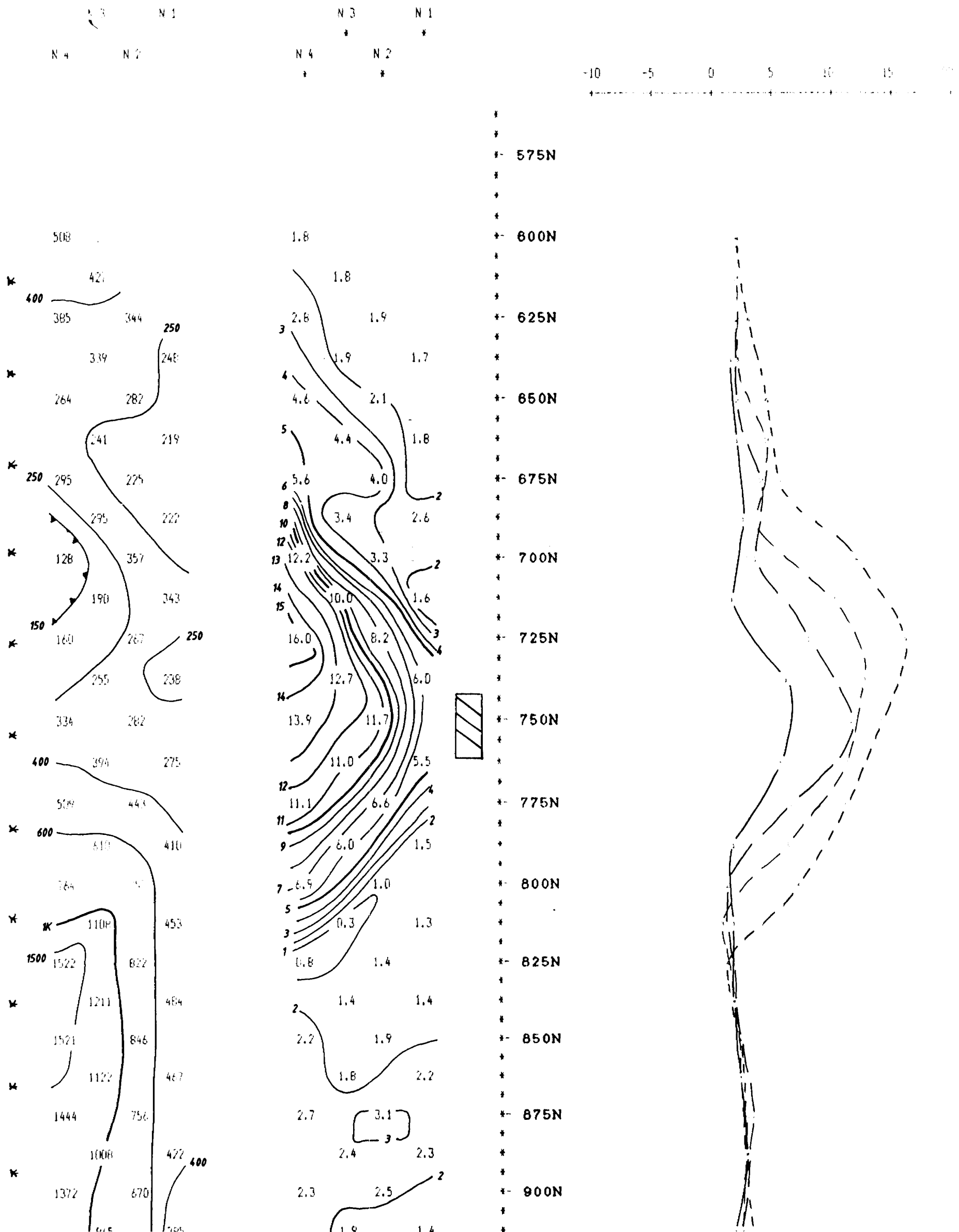


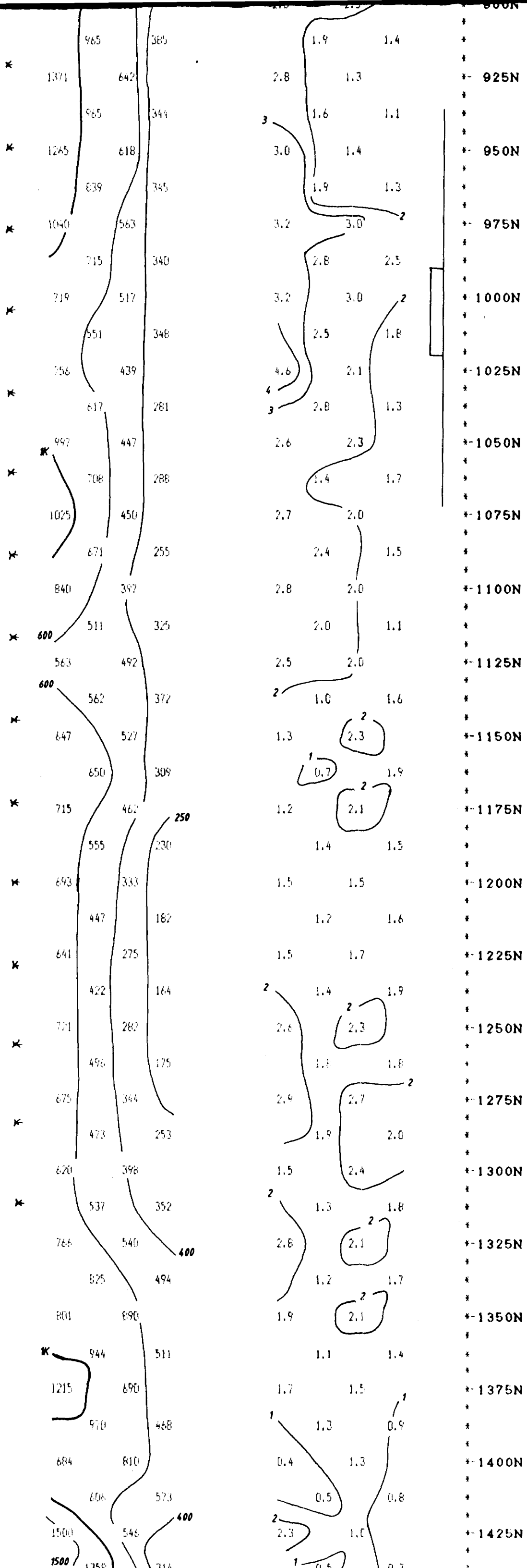
SCALE = 1 : 1250

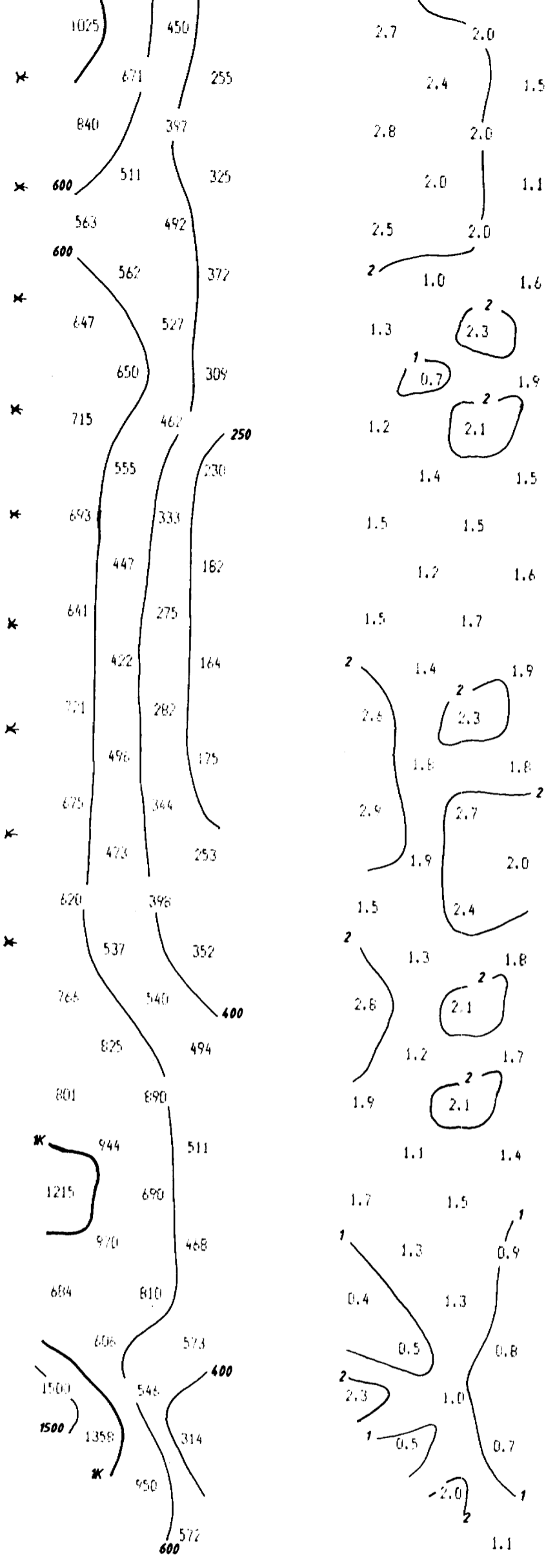
RESISTIVITY  
(ohm-metres)

CHARGEABILITY  
(milliseconds)

CHARGEABILITY PROFILE







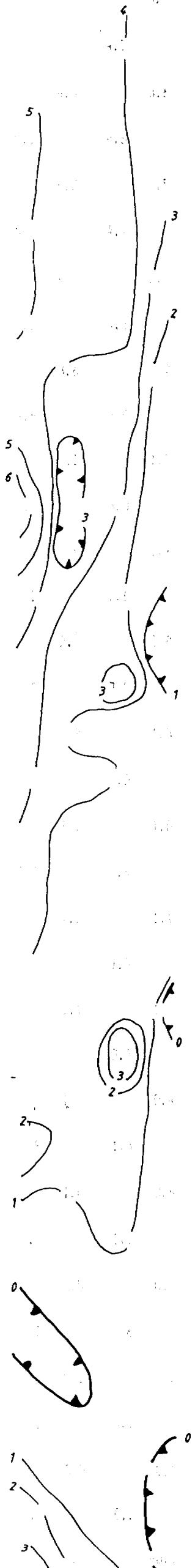
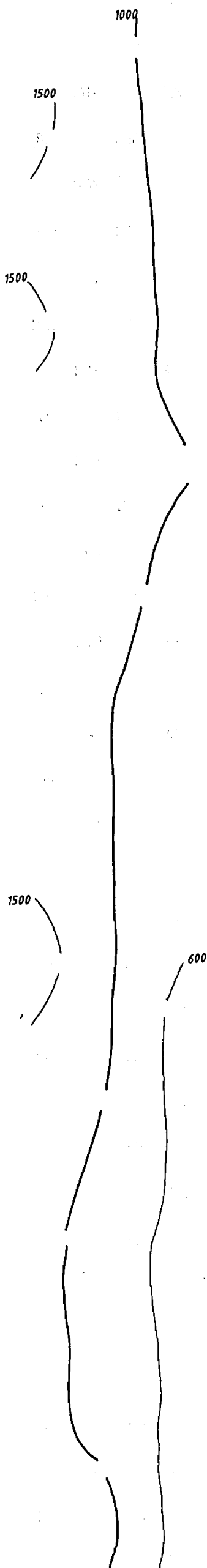
- \* -1075N
- \* -1100N
- \* -1125N
- \* -1150N
- \* -1175N
- \* -1200N
- \* -1225N
- \* -1250N
- \* -1275N
- \* -1300N
- \* -1325N
- \* -1350N
- \* -1375N
- \* -1400N
- \* -1425N
- \* -1450N
- \* -1475N

HIGHWAY 01  
AT 1475 N

HEIGHTS  
1000 1500

COMPARABILITY  
100 115 130 145

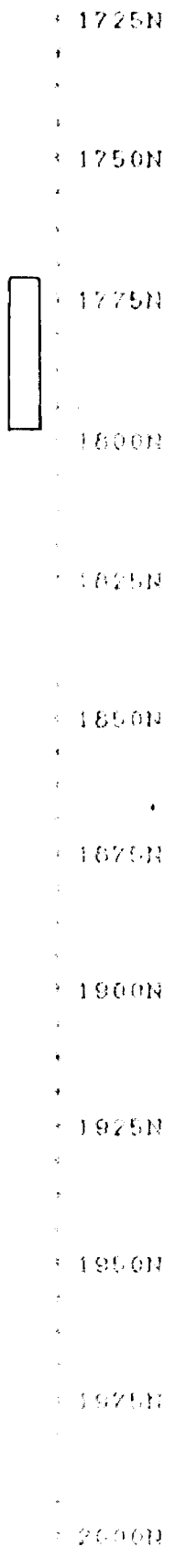
COMPARABILITY  
100 115 130 145



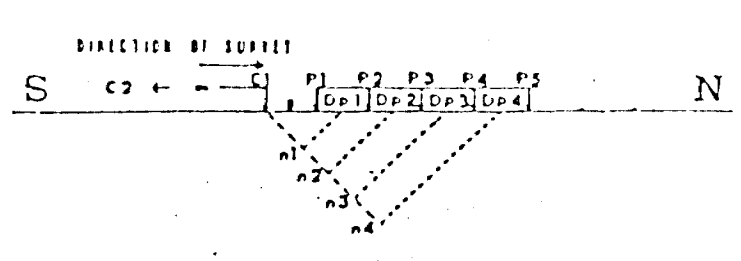
- 1300N
- 1325N
- 1350N
- 1375N
- 1400N
- 1425N
- 1450N
- 1475N
- 1500N
- 1525N
- 1550N
- 1575N
- 1600N
- 1625N
- 1650N
- 1675N
- 1700N



HIGHWAY AT 1675 N



SECTION 17  
 SECTION 18  
 SECTION 19  
 SECTION 20  
 SECTION 21  
 SECTION 22  
 SECTION 23  
 SECTION 24  
 SECTION 25  
 SECTION 26  
 SECTION 27  
 SECTION 28  
 SECTION 29  
 SECTION 30  
 SECTION 31  
 SECTION 32  
 SECTION 33  
 SECTION 34  
 SECTION 35  
 SECTION 36  
 SECTION 37  
 SECTION 38  
 SECTION 39  
 SECTION 40  
 SECTION 41  
 SECTION 42  
 SECTION 43  
 SECTION 44  
 SECTION 45  
 SECTION 46  
 SECTION 47  
 SECTION 48  
 SECTION 49  
 SECTION 50  
 SECTION 51  
 SECTION 52  
 SECTION 53  
 SECTION 54  
 SECTION 55  
 SECTION 56  
 SECTION 57  
 SECTION 58  
 SECTION 59  
 SECTION 60  
 SECTION 61  
 SECTION 62  
 SECTION 63  
 SECTION 64  
 SECTION 65  
 SECTION 66  
 SECTION 67  
 SECTION 68  
 SECTION 69  
 SECTION 70  
 SECTION 71  
 SECTION 72  
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 SECTION 81  
 SECTION 82  
 SECTION 83  
 SECTION 84  
 SECTION 85  
 SECTION 86  
 SECTION 87  
 SECTION 88  
 SECTION 89  
 SECTION 90  
 SECTION 91  
 SECTION 92  
 SECTION 93  
 SECTION 94  
 SECTION 95  
 SECTION 96  
 SECTION 97  
 SECTION 98  
 SECTION 99  
 SECTION 100



*Greg Hodges*



SCALE : 1 : 1250

RESISTIVITY  
(ohm - metres)

CHARGEABILITY  
(milliseconds)

CHARGEABILITY PROFILE

N 3      N 1  
N 4      N 2

N 3      N 1  
\*      \*  
N 4      N 2  
\*      \*

-10    -5    0    5    10    15

\*

\*

\*

\*

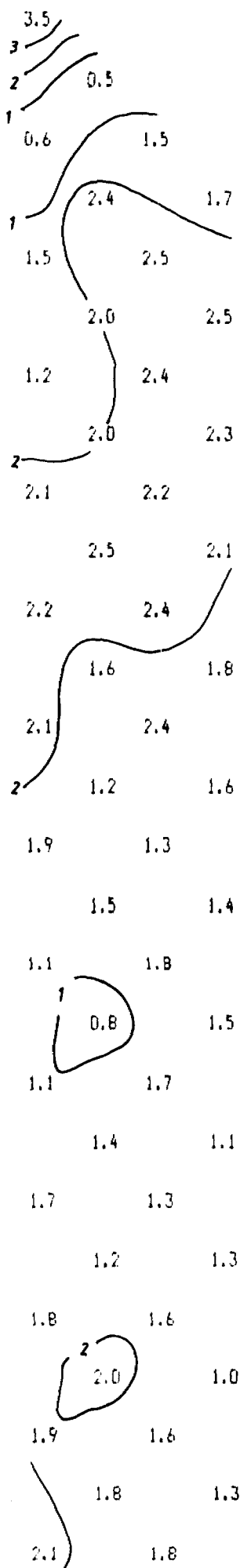
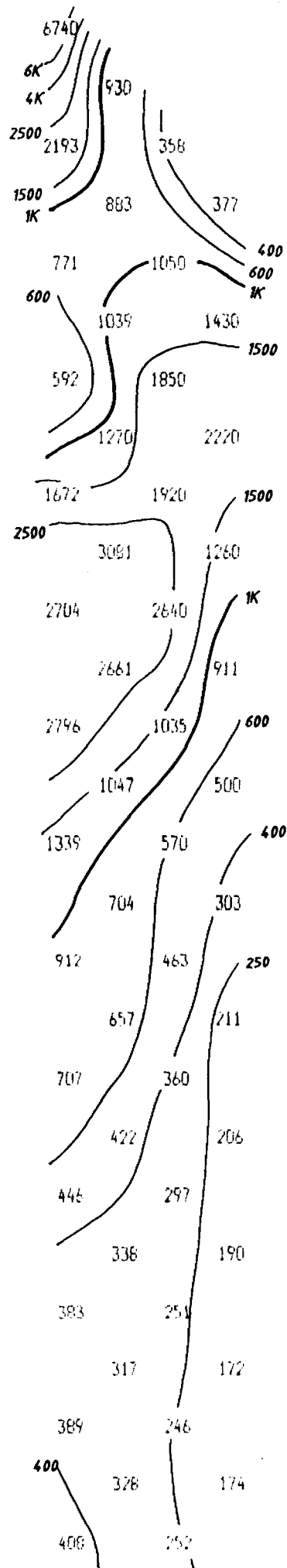
\*

\*

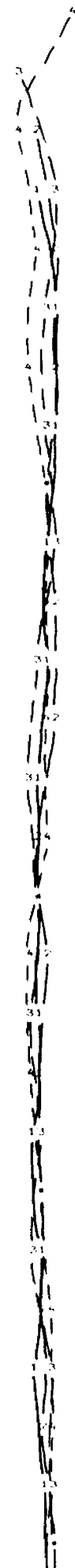
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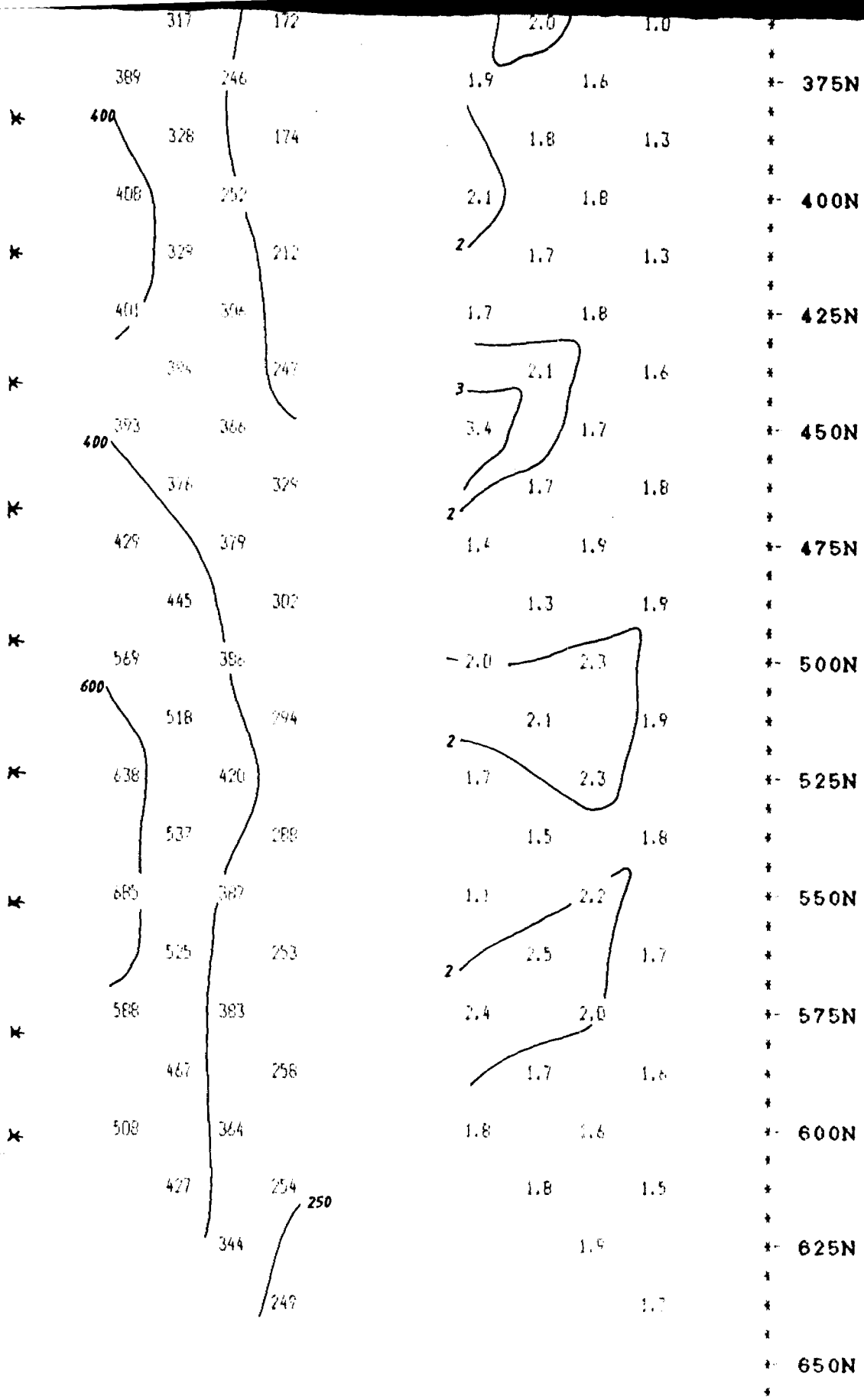
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\*



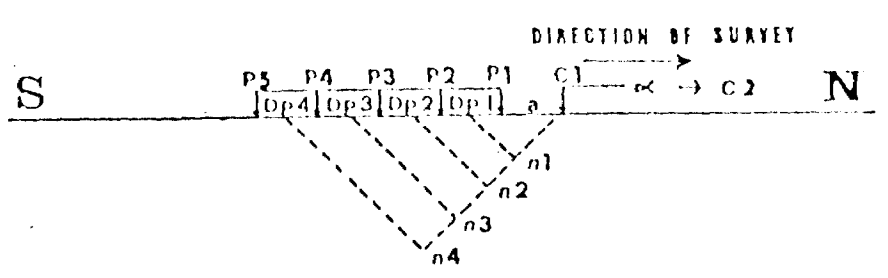
\*  
\*  
\* 50N  
\*  
\*  
\* 75N  
\*  
\*  
\* 100N  
\*  
\*  
\* 125N  
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\*  
\* 150N  
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\* 175N  
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\* 200N  
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\* 225N  
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\* 250N  
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\* 275N  
\*  
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\* 300N  
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\*  
\* 325N  
\*  
\*  
\* 350N  
\*  
\*  
\* 375N  
\*  
\*  
\* 400N  
\*





Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 27/10/86  
 Operator : CDJ  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted



\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

IP Pseudosections for N = 1 to 4  
 'a' Spacing = 25 M

*Bry Rodger*

SCALE 1:1250

PHASE (1000)  
(volts/metre)

CHARACTERISTICS  
(millivolts)

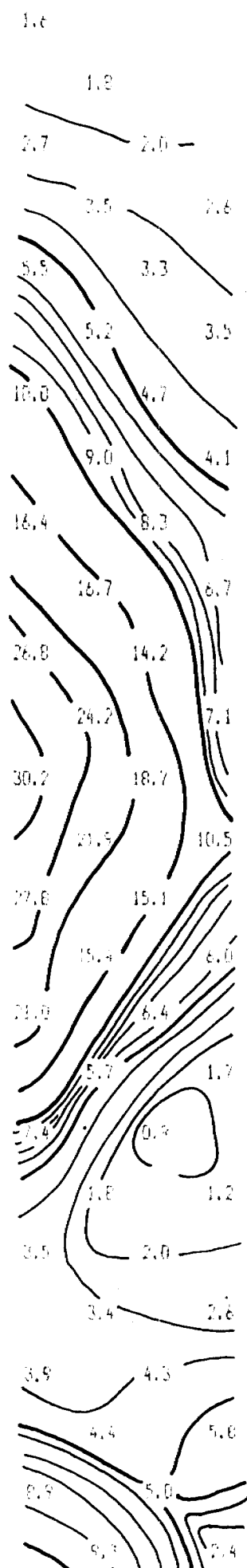
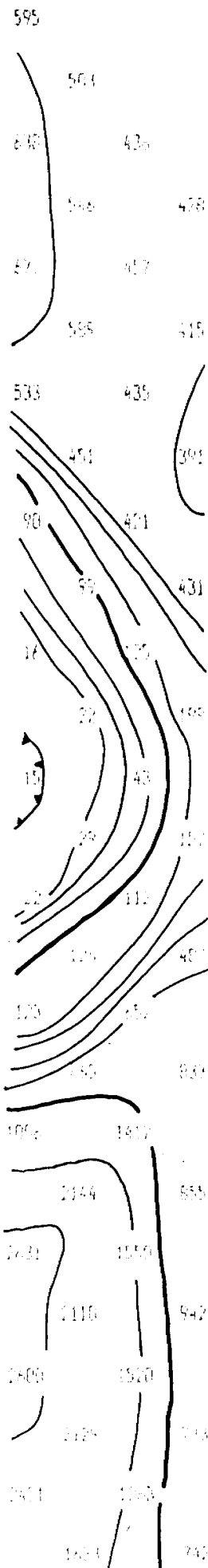
CHARACTERISTICS (PHASE)

N 3 N 1  
N 4 N 2

N 3 N 1  
N 4 N 2

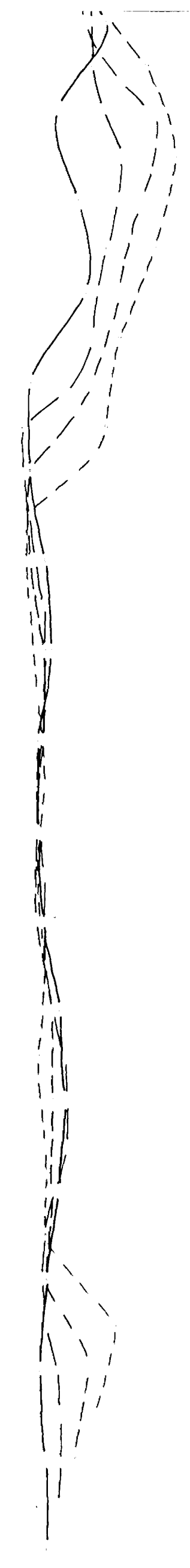
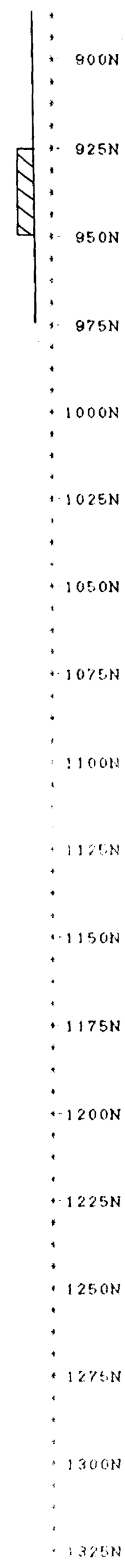
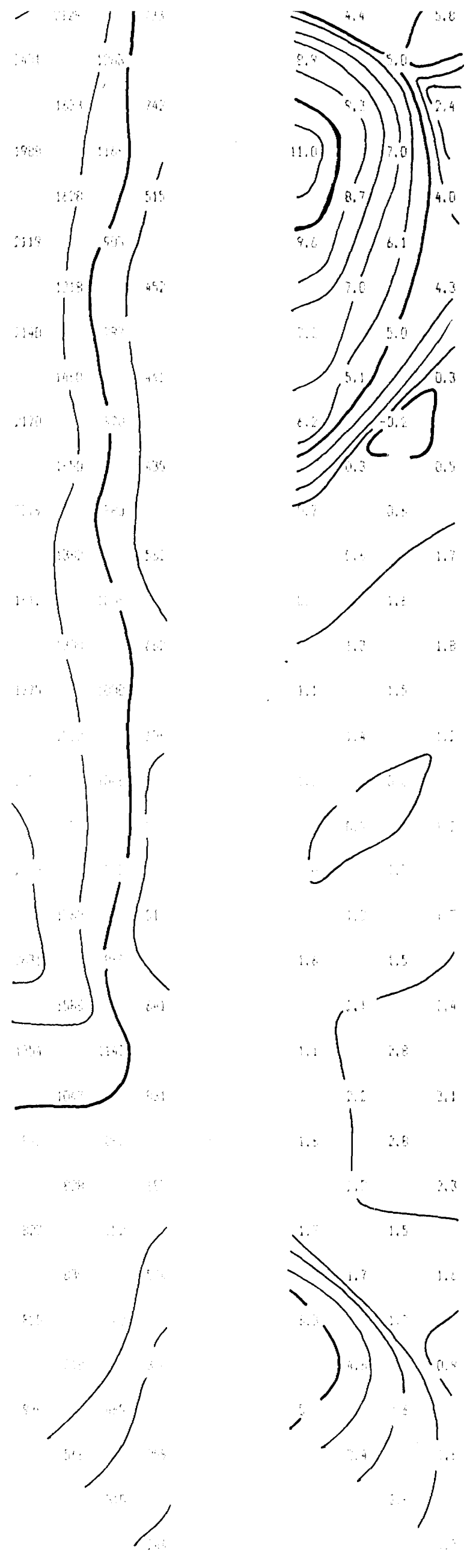
-10 -5 0 5 10 15

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\*  
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\*  
\*



575N  
600N  
625N  
650N  
675N  
700N  
725N  
750N  
775N  
800N  
825N  
850N  
875N  
900N

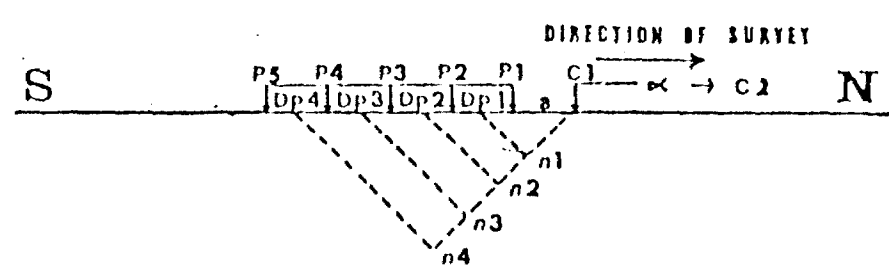




HIGHWAY 101  
AT 1325 N

Property : HERR COALIER  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 22/10/86  
 Operator : GDB  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off



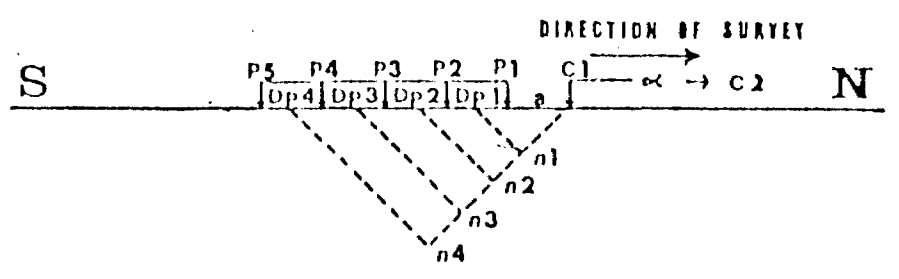


1125N  
1150N  
1175N  
1200N  
1225N  
1250N  
1275N  
1300N  
1325N



HIGHWAY 101  
AT 925 N

Property : BARRIE PROPERTY  
 Client : BRIDGE RESOURCES LTD.  
 Date of Survey : 2/7/10/06  
 Operator : GDI  
 Electrod Array : DIFPOL - DIFPOL  
 Mode : TIME DOMAIN  
 Receiver : SCINIBEX IFR 11  
 Transmitter : BRONIX 101-J  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ns  
 Integration Time : 300 ns  
 Slice # 7 Plotted



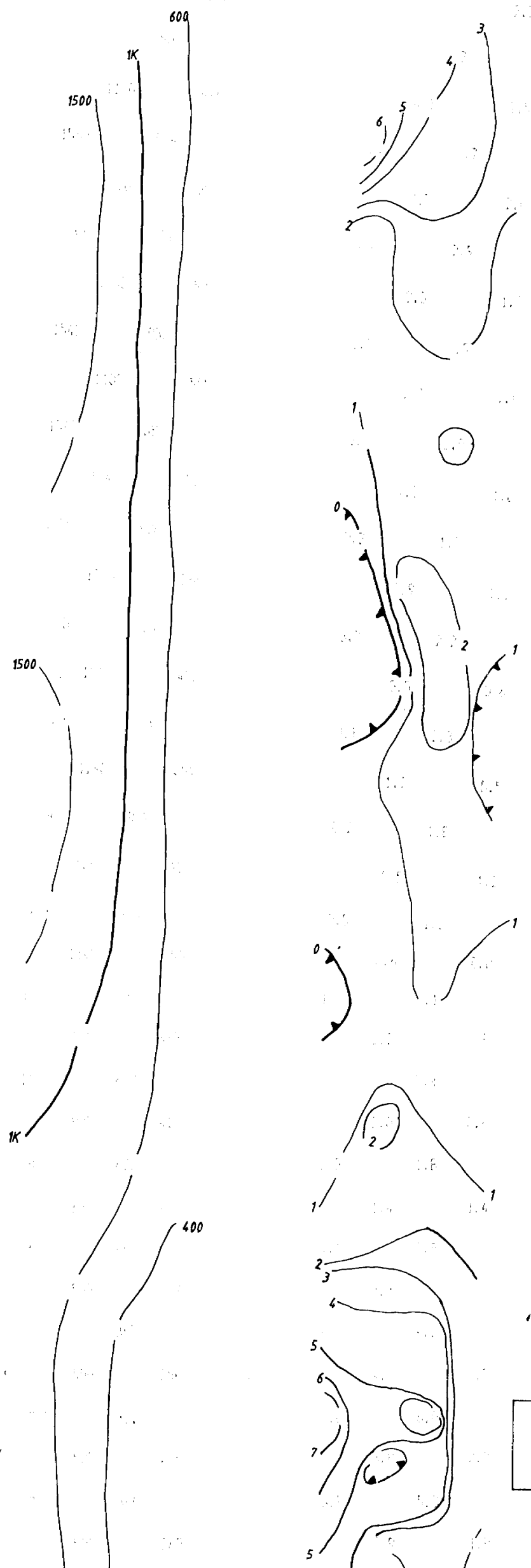
\*\*\*\*\*  
 R. S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

*Greg Anderson*

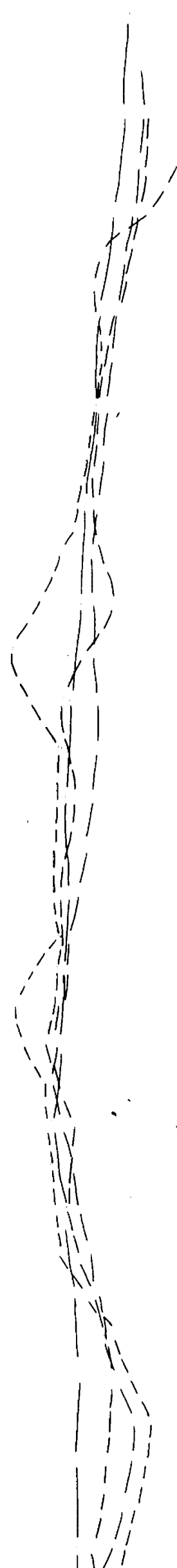
IP Pseudosections for N = 1 to 4  
 100 Spacing = 25 M  
 1000 300 E

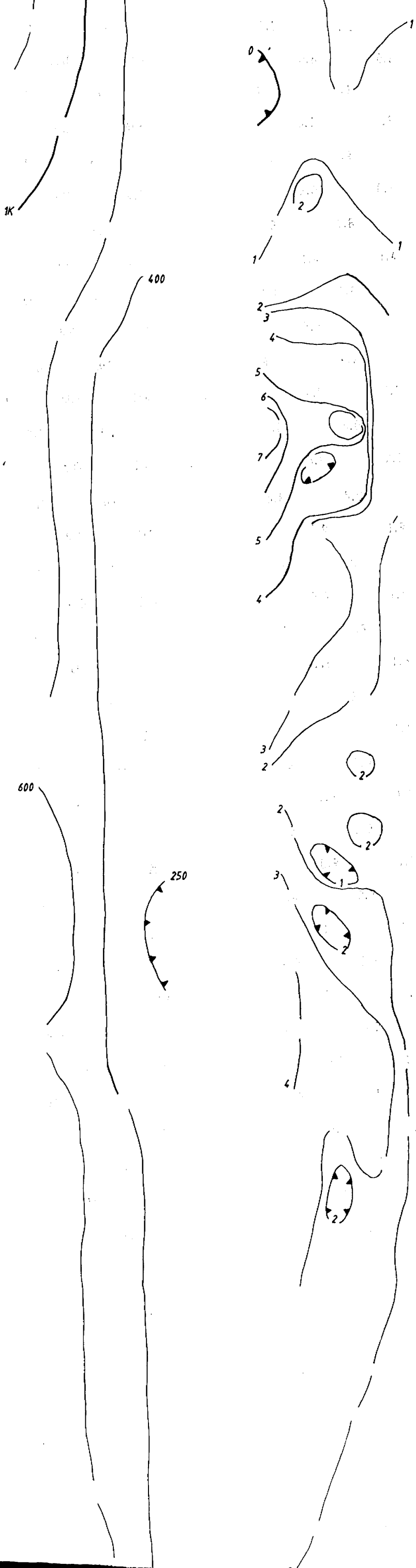
SECTION 1 - 3 : 30000

OLD ROAD AT 1345 N



- + 1375N
- + 1400N
- + 1425N
- + 1450N
- + 1475N
- + 1500N
- + 1525N
- + 1550N
- + 1575N
- + 1600N
- + 1625N
- + 1650N
- + 1675N
- + 1700N
- + 1725N
- + 1750N
- + 1775N
- + 1800N





1600N

1625N

1650N

1675N

1700N

1725N

1750N

1775N

1800N

1825N

1850N

1875N

1900N

1925N

1950N

1975N

2000N

2025N

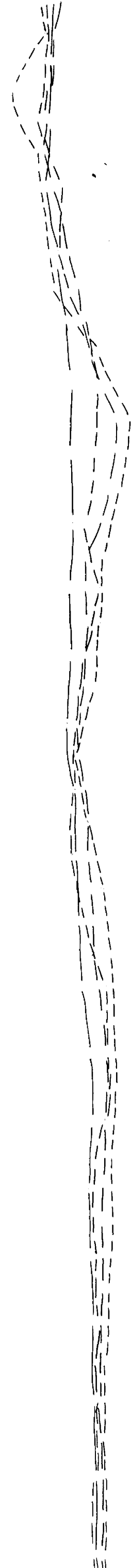
2050N

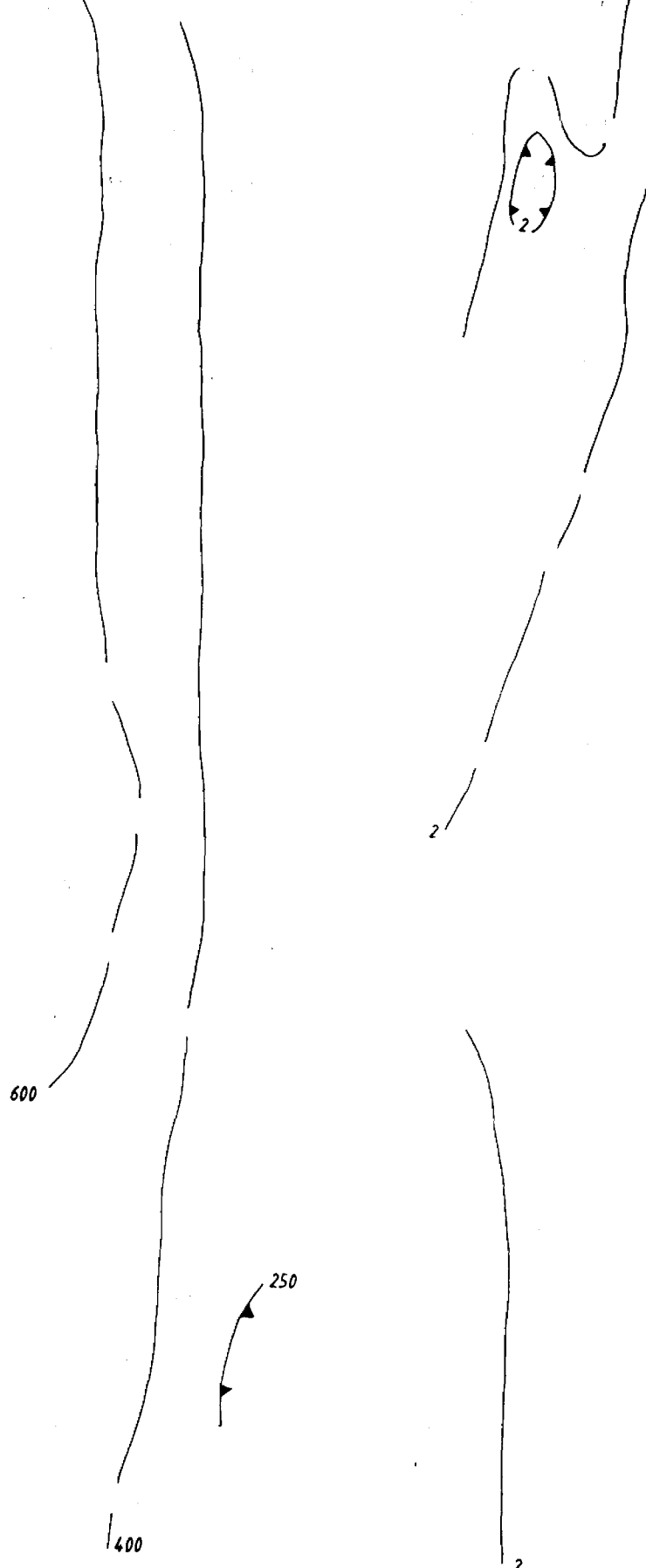
2075N

2100N

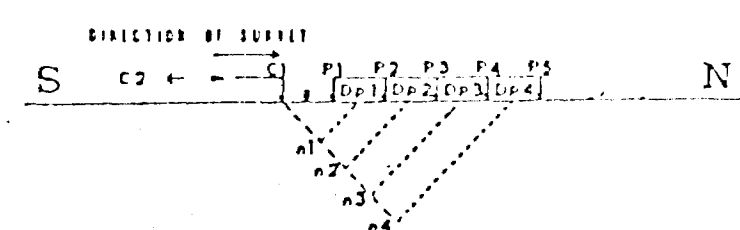
2125N

2150N





2025N  
 2050N  
 2075N  
 2100N  
 2125N  
 2150N  
 2175N  
 2200N  
 2225N  
 2250N  
 2275N  
 2300N  
 2325N  
 2350N  
 2375N  
 2400N  
 2425N  
 2450N  
 2475N  
 2500N  
 2525N  
 2550N  
 2575N  
 2600N  
 2625N  
 2650N  
 2675N  
 2700N  
 2725N  
 2750N  
 2775N  
 2800N  
 2825N  
 2850N  
 2875N  
 2900N  
 2925N  
 2950N  
 2975N  
 3000N



1. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

2. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

3. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

4. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

5. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

6. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

7. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

8. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

9. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

10. The survey was conducted in accordance with the provisions of the Survey Act, 1967 and the Survey Rules, 1968.

\*\*\*\*\*  
 SURVEYOR GENERAL  
 SURVEY OF INDIA  
 \*\*\*\*\*

*By [Signature]*

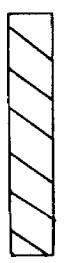
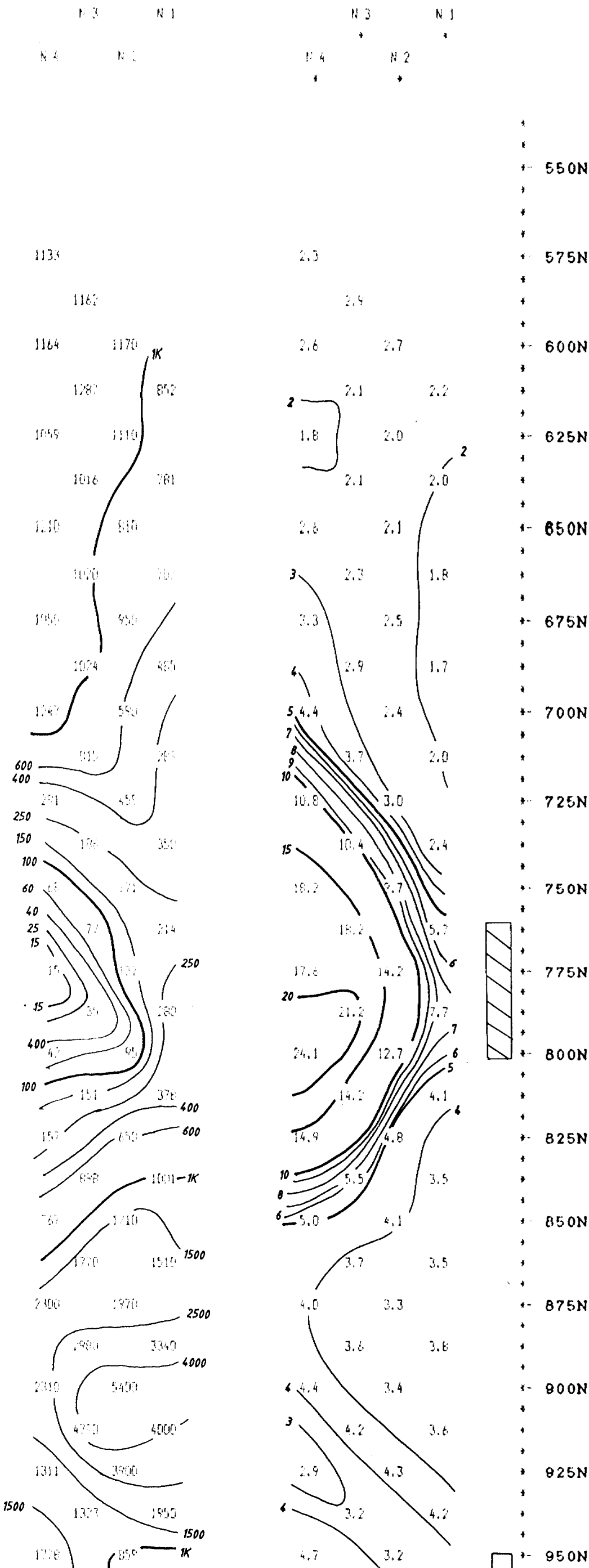


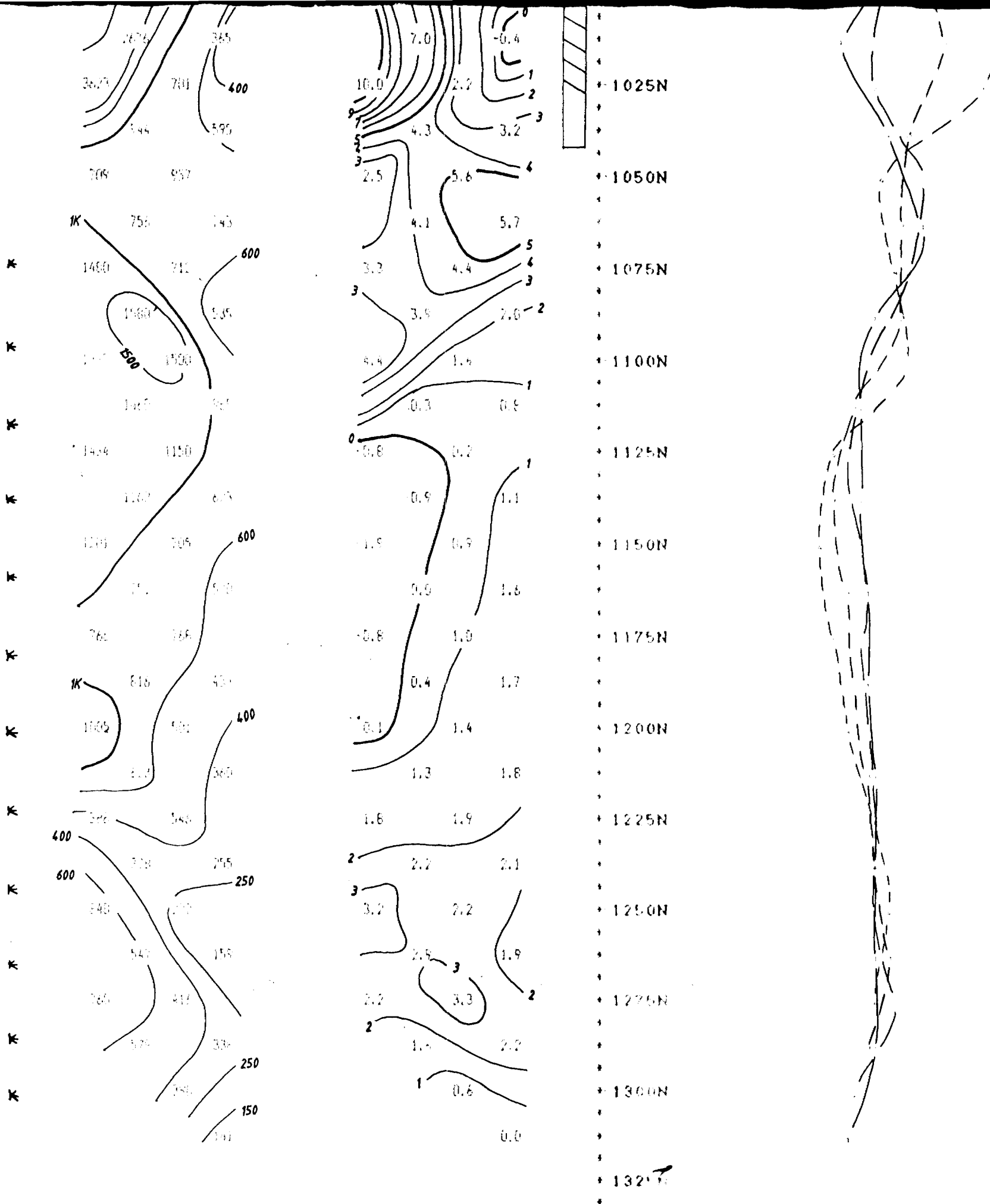
SCALE : 1 : 1250

RESISTIVITY  
(ohm - metres)

CHARGEABILITY  
(milliseconds)

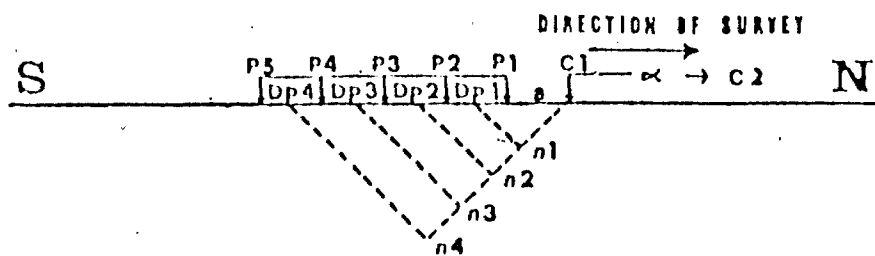
CHARGEABILITY PROFILE





Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 21/10/86  
 Operator : KRJ  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms.  
 Integration Time : 780 ms  
 Slice # 7 Plotted

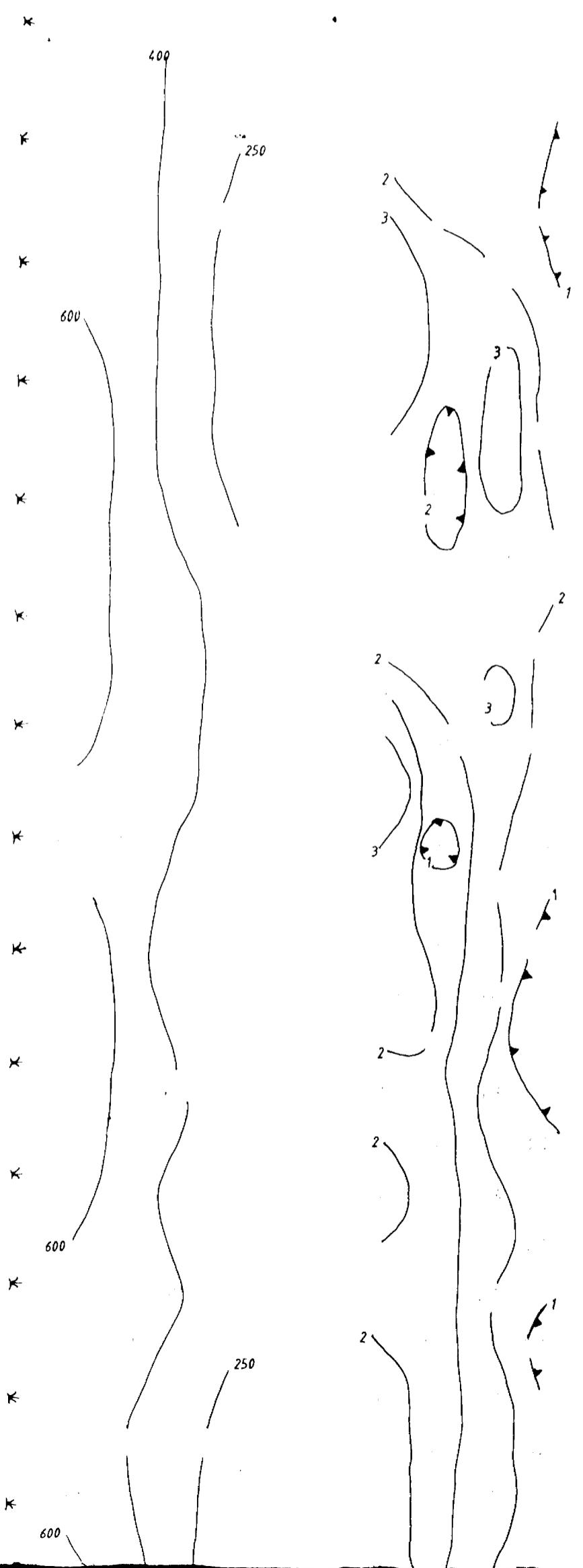


\*\*\*\*\*  
 R. S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

*Bry Lodge*

16 Pseudosections for N = 1 to 4

1a7 Spacing = 25 M

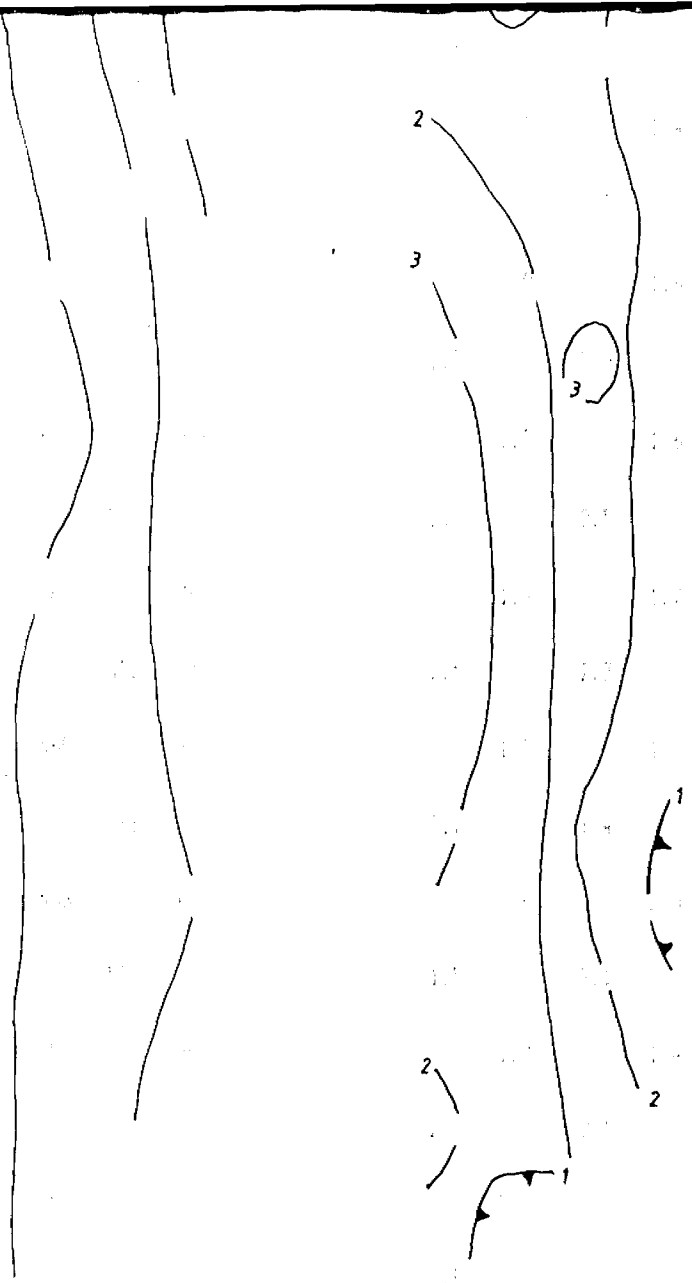


1975N  
1980N  
1985N  
1990N  
1995N  
2000N  
2005N  
2010N  
2015N  
2020N  
2025N  
2030N  
2035N  
2040N  
2045N  
2050N  
2055N  
2060N  
2065N  
2070N  
2075N  
2080N

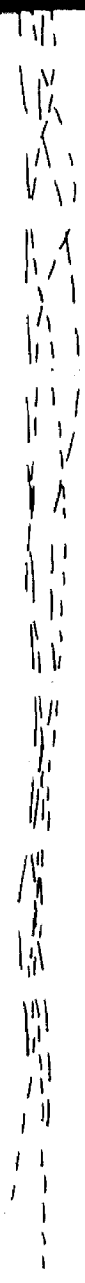


TRACK AT 2225 N

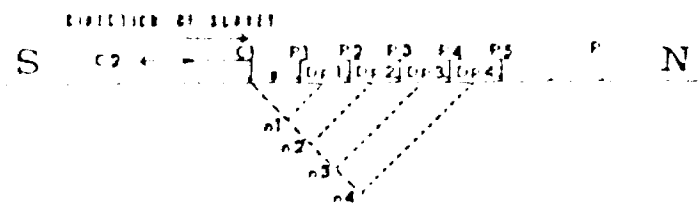
\*  
\*  
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\*  
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2125N  
 2150N  
 2175N  
 2200N  
 2225N  
 2250N  
 2275N  
 2300N  
 2325N  
 2350N



Copyright © BROWN PROPERTY  
 Company : ARCADIA RESOURCES LTD.  
 Date of survey : 22/11/06  
 Operator : BRJ  
 Electrode Array : POLE - DIPOL  
 No. of : 1160 DOMAINS  
 Receiver : SCIRIBLY 1PR 11  
 Transmitter : PHOENIX 1PR 1  
 Pulse Time : 2 Sec on / 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 700 ms  
 Slice # 7 Plotted



\*\*\*\*\*  
 R.S. SIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

*Greg Lodge*

11 Pseudosections for N = 2 to 5  
 5m Spacing = 25 M

SCALE : 1 : 2500

TEMPERATURE  
(°C)

TEMPERATURE  
(°C)

CHAPARRAL PROFILE

1000

1000

1000

950N

975N

1000N

1025N

1050N

1075N

1100N

1125N

1150N

1175N

1200N

1225N

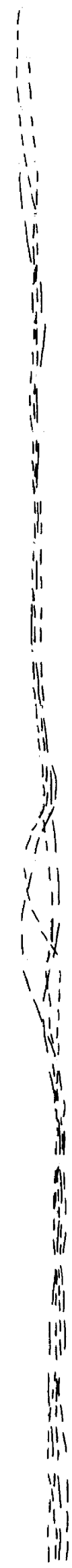
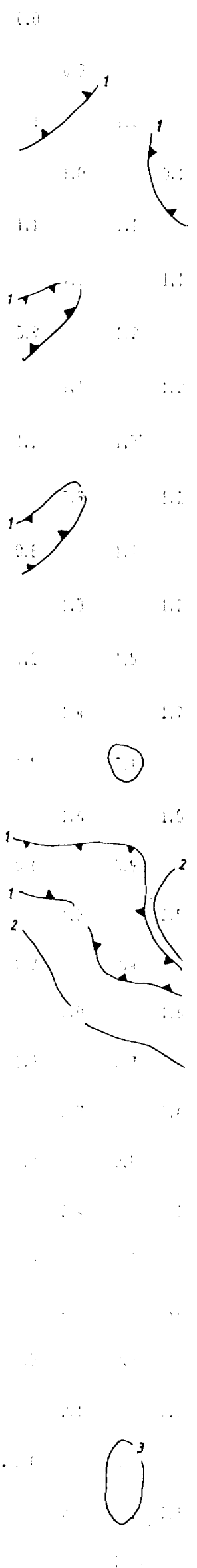
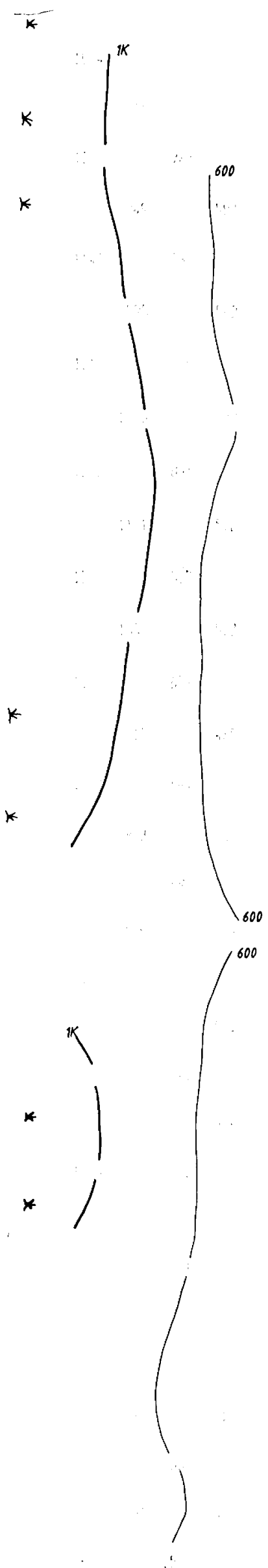
1250N

1275N

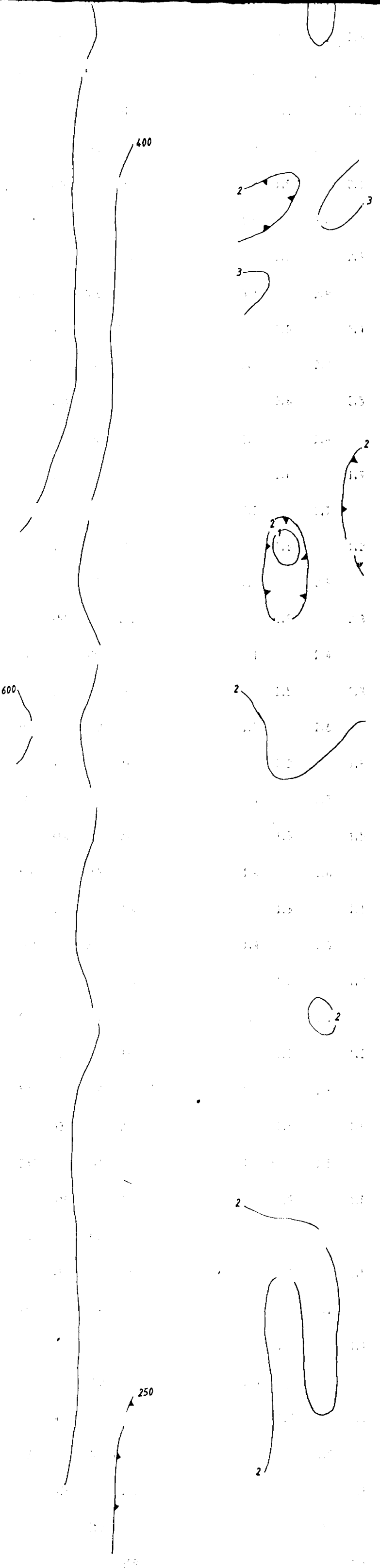
1300N

1325N

1350N

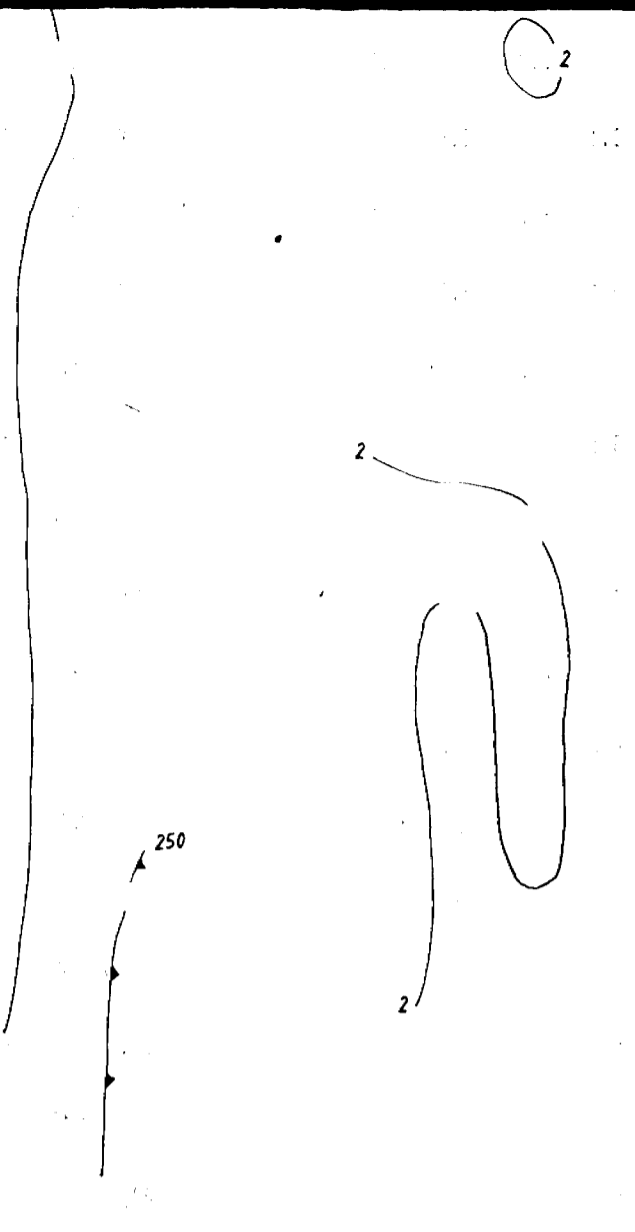


1350N  
1375N  
1400N  
1425N  
1450N  
1475N  
1500N  
1525N  
1550N  
1575N  
1600N  
1625N  
1650N  
1675N  
1700N  
1725N  
1750N  
1775N  
1800N  
1825N  
1850N



SMALL CLEARING  
AT 1685 N

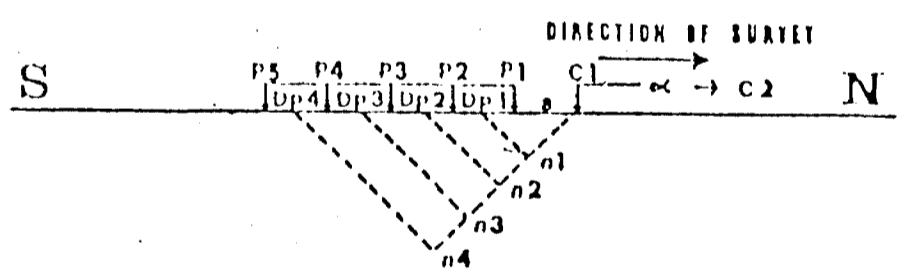




1675N  
 1700N  
 1725N  
 1750N  
 1775N  
 1800N  
 1825N  
 1850N  
 1875N



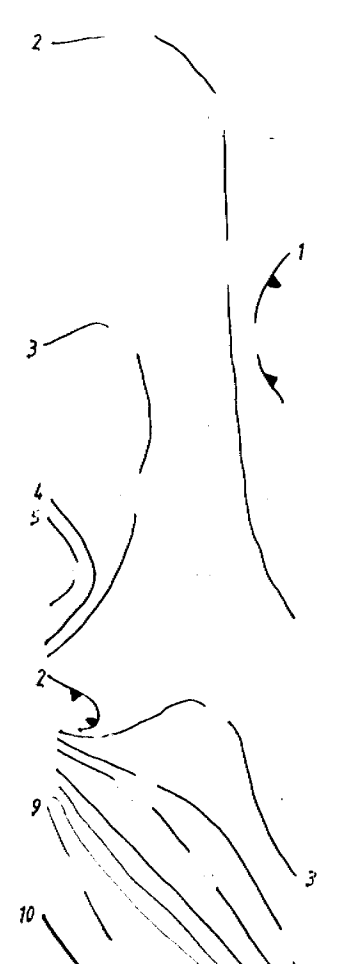
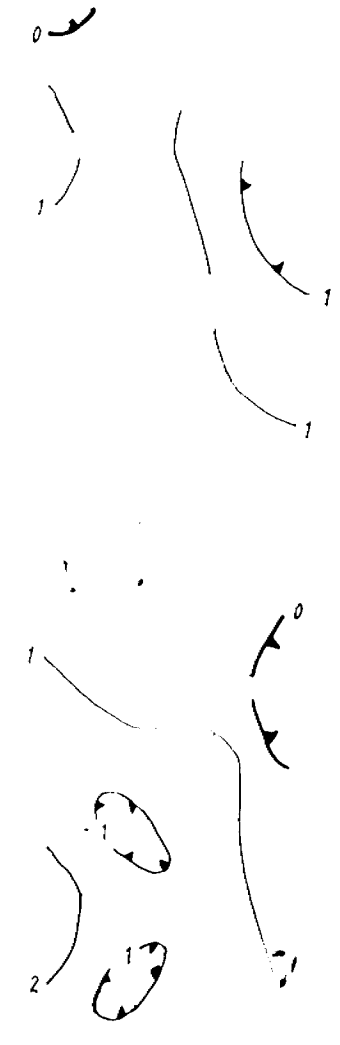
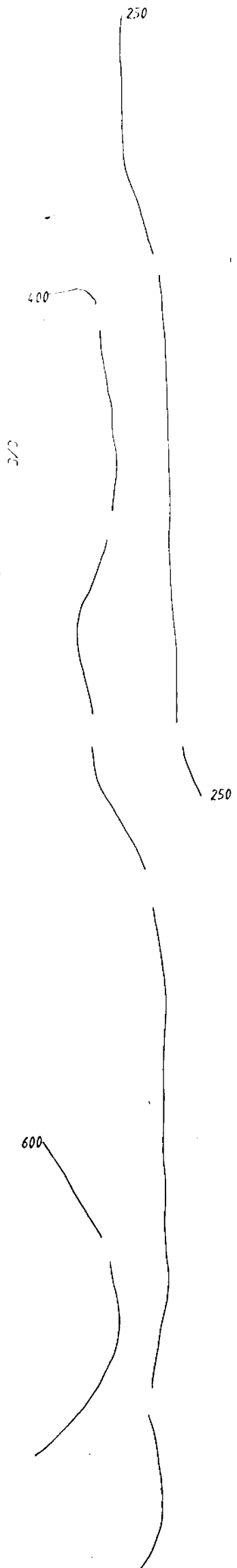
Project: ...  
 Client: ...  
 Date of Issue: ...  
 Operator: ...  
 Project: ...  
 Name: ...  
 Location: ...  
 Scale: ...  
 Reference: ...  
 Date: ...  
 Author: ...  
 Title: ...



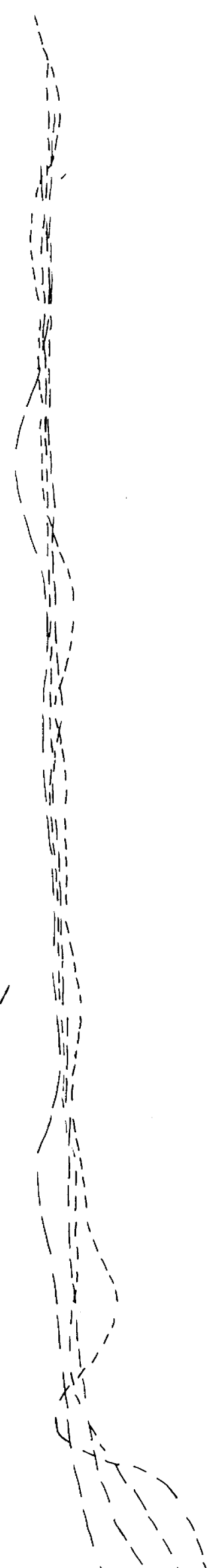
\*\*\*\*\*  
 MINERALS EXPLORATION  
 SERVICES, INC.  
 \*\*\*\*\*

*By [Signature]*

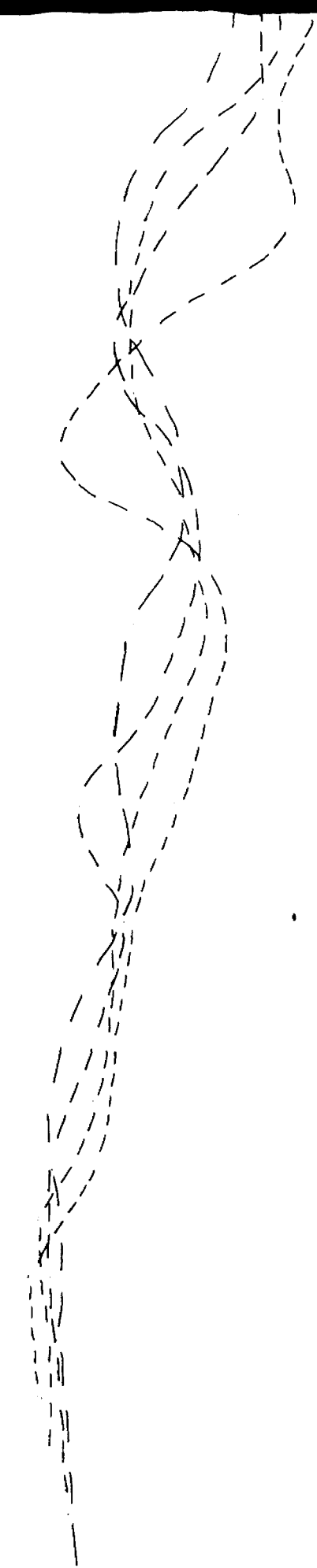
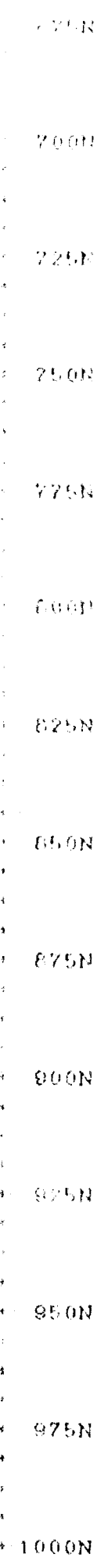
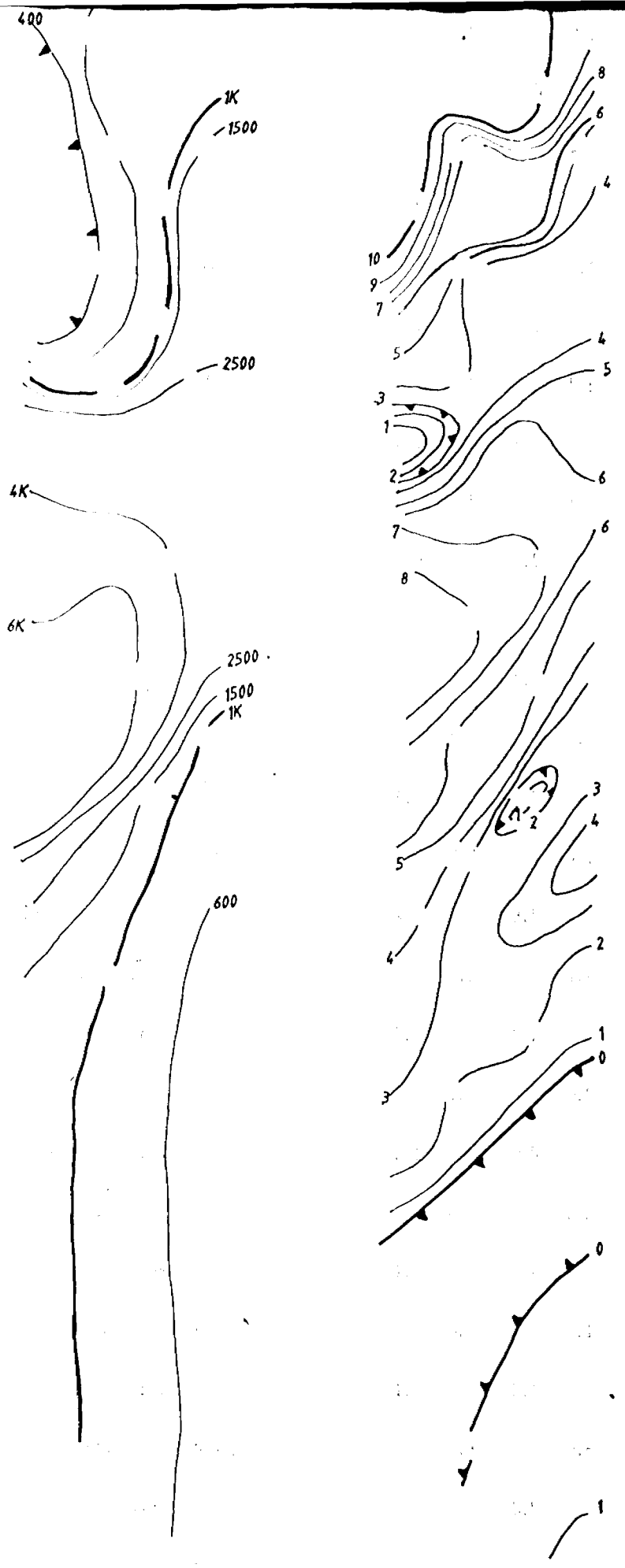
Project: ...  
 Date: ...



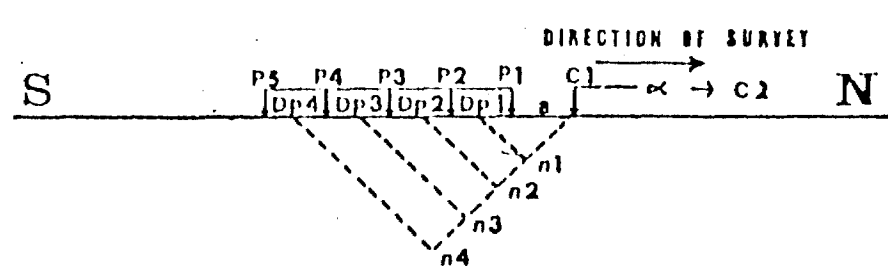
Vertical column of text or numbers, likely a scale or legend, consisting of a series of small, illegible characters or digits arranged vertically.





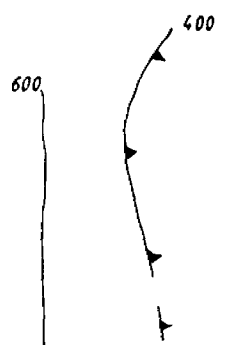


REPORT ON MAGNETIC PROPERTIES  
 OF THE UNION D. RESOURCES LTD.  
 PROJECT NO. 1000000  
 LOCATION: AREA 1, POLY-DIPLOLE  
 AREA: 1000000  
 PROJECTED BY: M. J. B. (THE D)  
 PROJECTED BY: M. J. B. (THE D)  
 DATE: 1960  
 SCALE: 1:10000  
 DATE OF SURVEY: 1960  
 BY: M. J. B.



\*\*\*\*\*  
 M. J. B. (THE D) EXPLORATION  
 SERVICES, INC.  
 \*\*\*\*\*

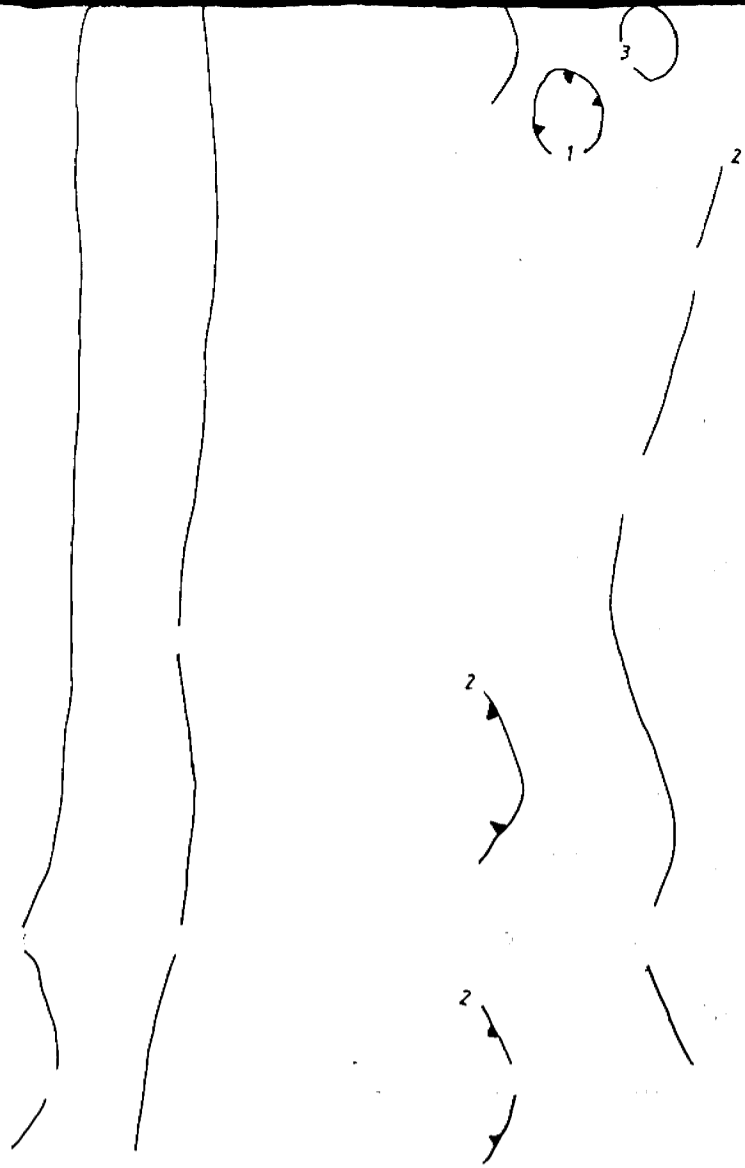
*Erq Bodger*



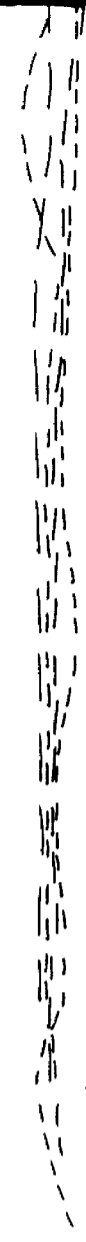
3

11750  
11500  
10750  
10000  
9250  
8500  
7750  
7000  
6250  
5500

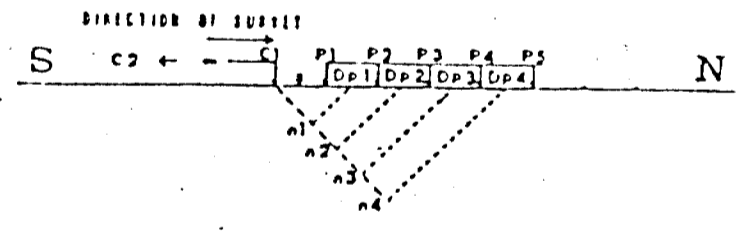




1725N  
 1650N  
 1675N  
 1900N  
 1925N  
 1950N  
 1975N  
 2000N  
 2025N  
 2050N



Company: [illegible]  
 Project: [illegible]  
 Location: [illegible]  
 Date: [illegible]  
 Scale: [illegible]  
 Author: [illegible]  
 Title: [illegible]  
 Date: [illegible]  
 Page: [illegible]

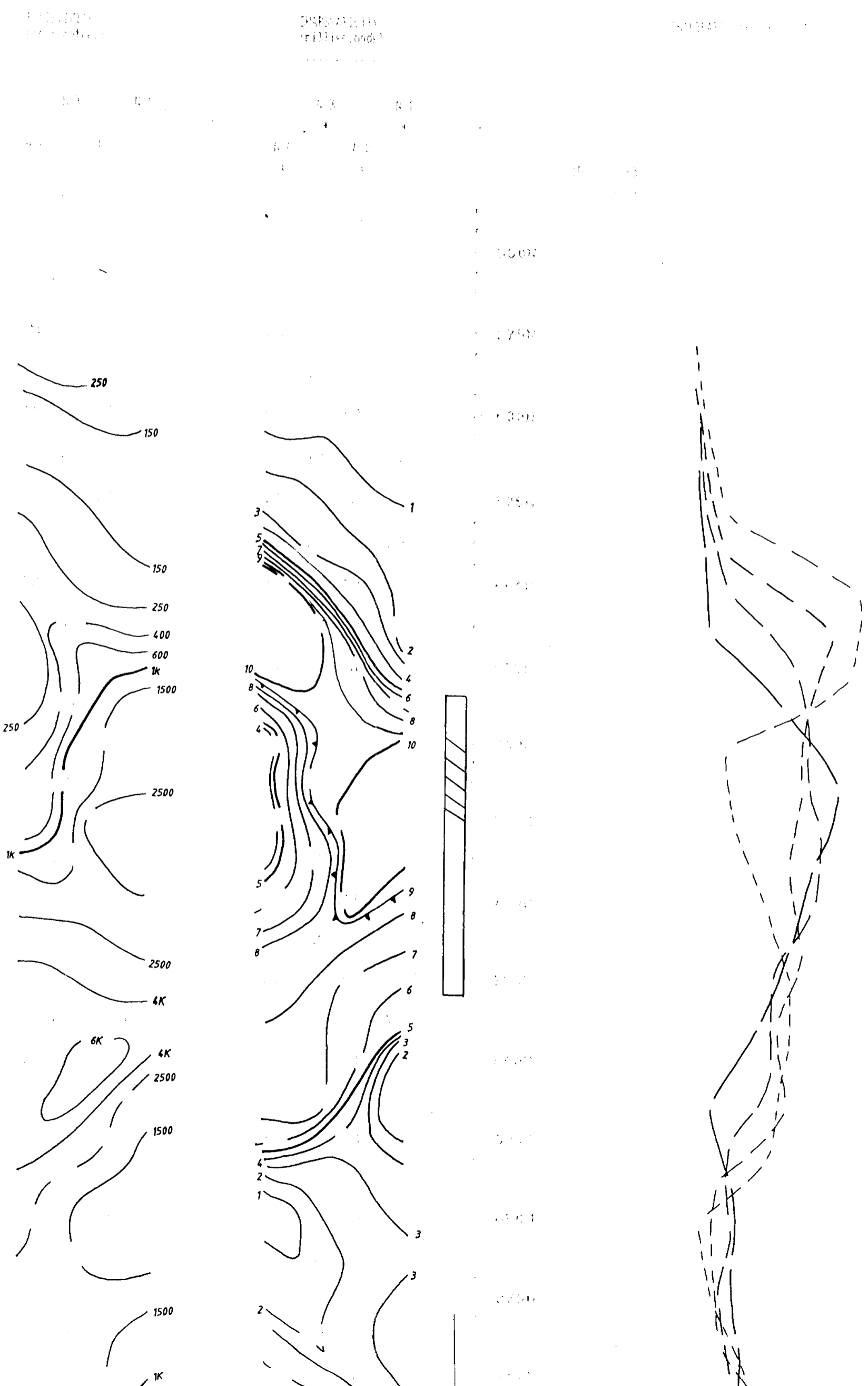


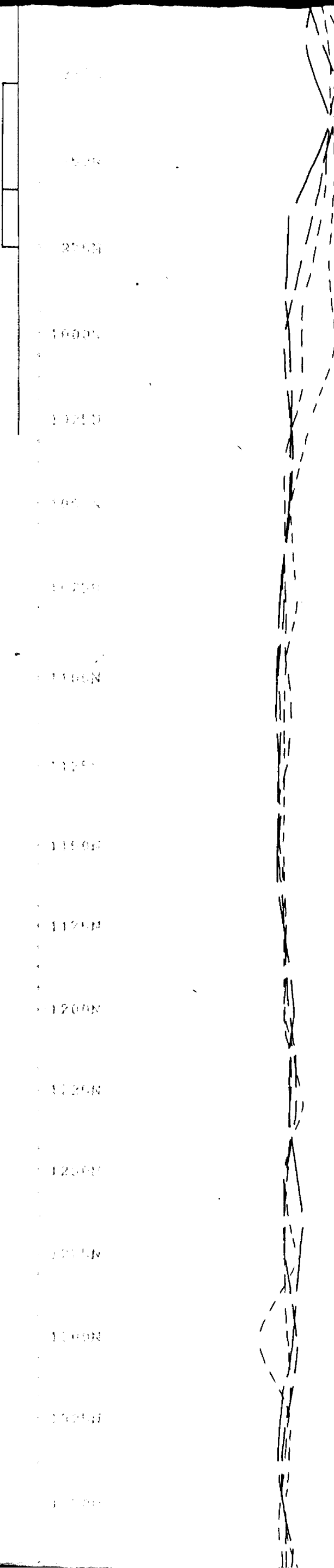
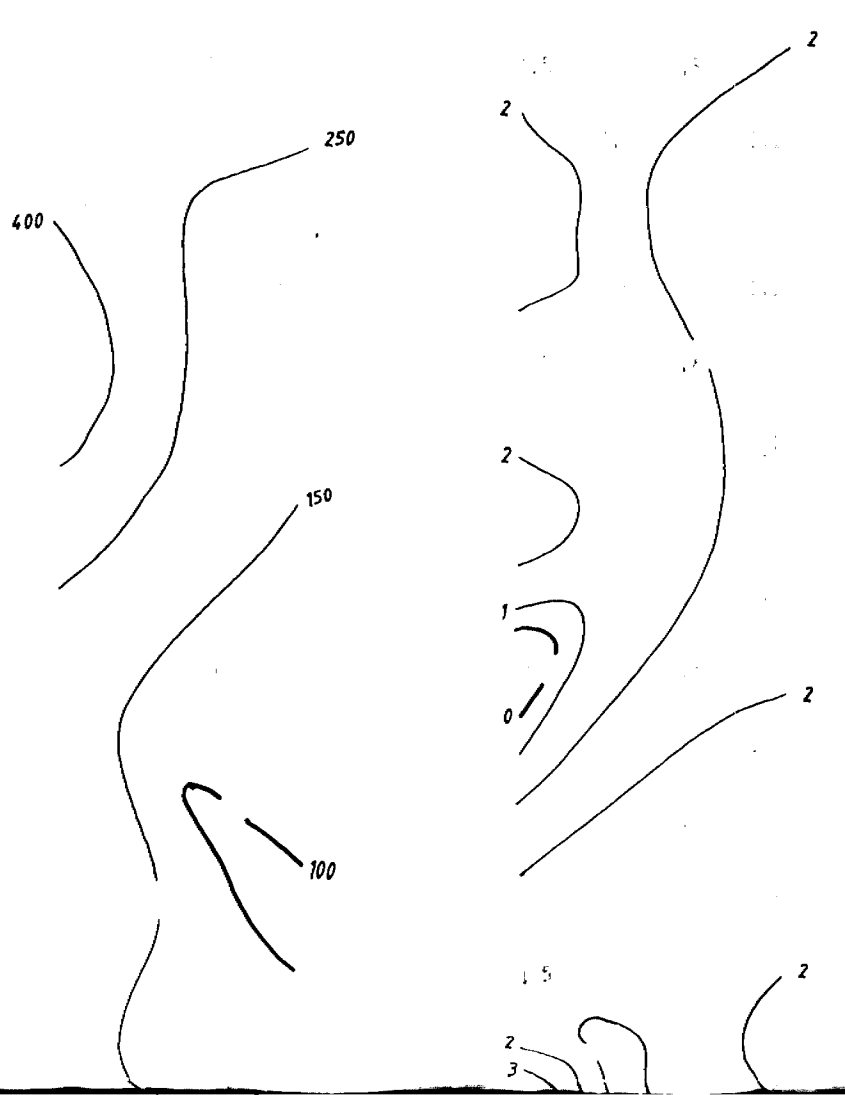
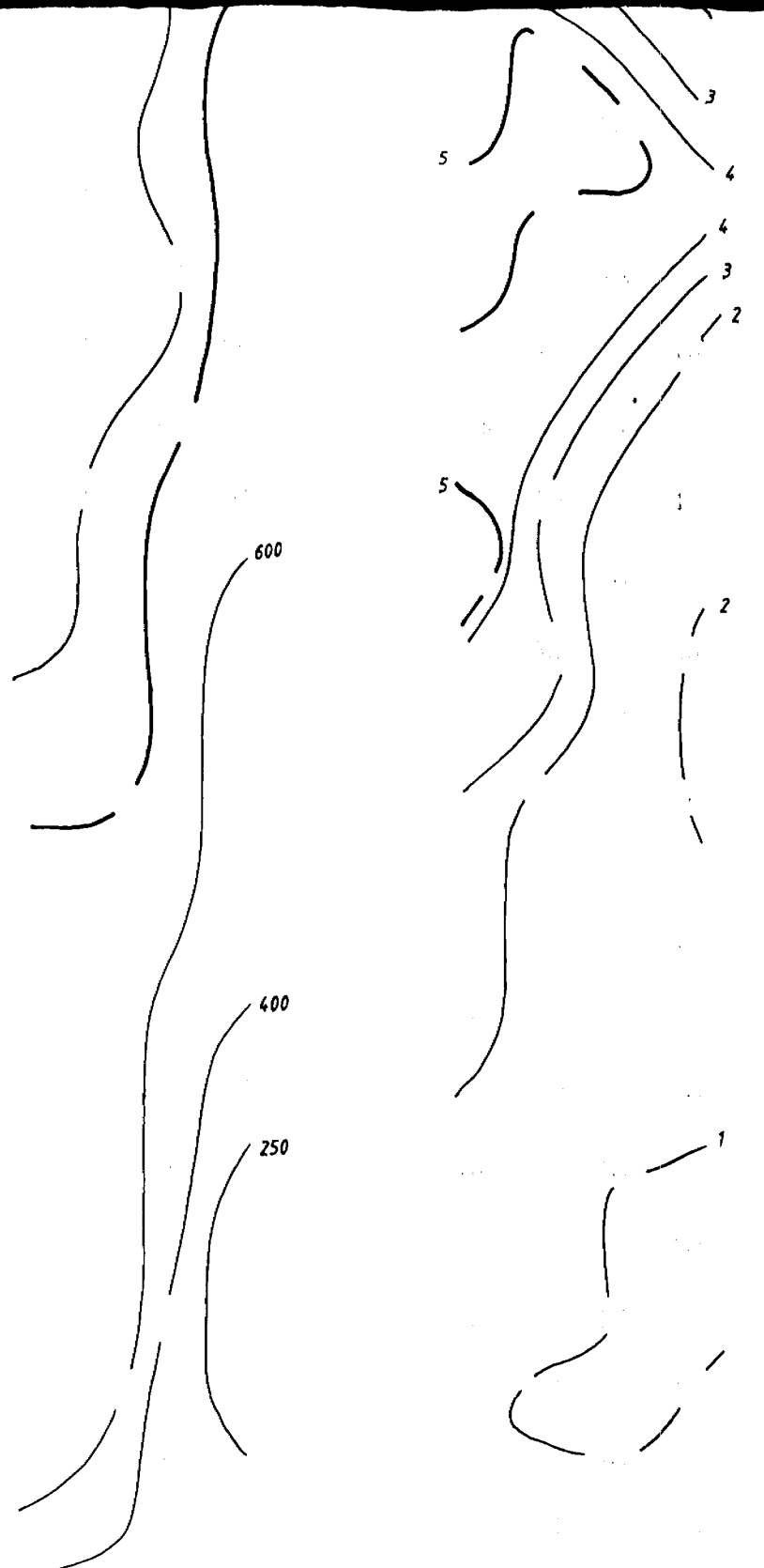
\*\*\*\*\*  
 U.S. HYDROLOGICAL EXPLORATION  
 SERVICES, INC.  
 \*\*\*\*\*

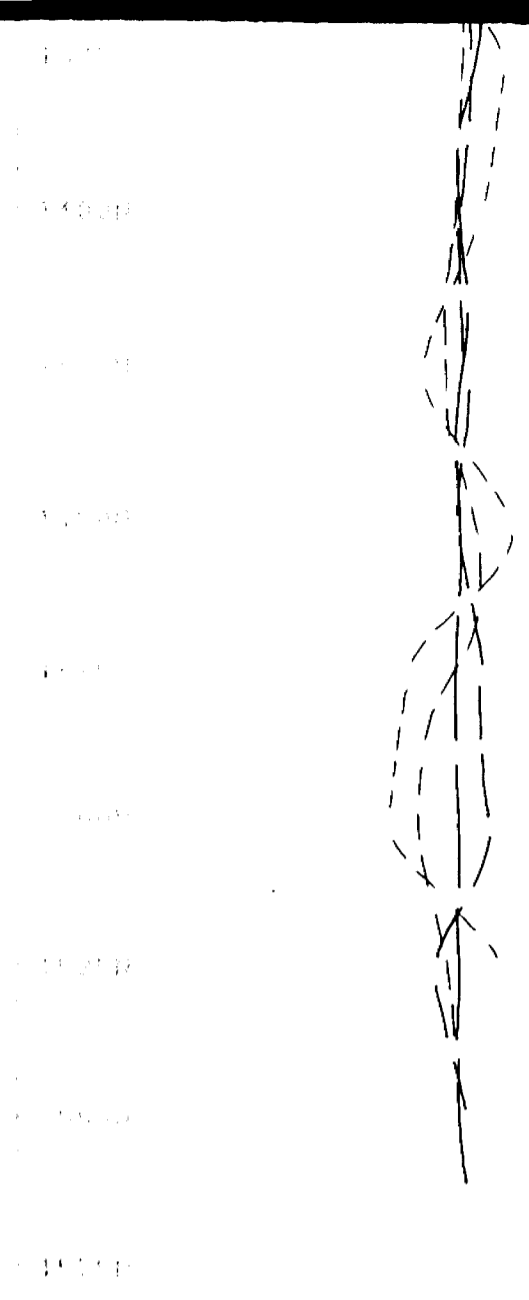
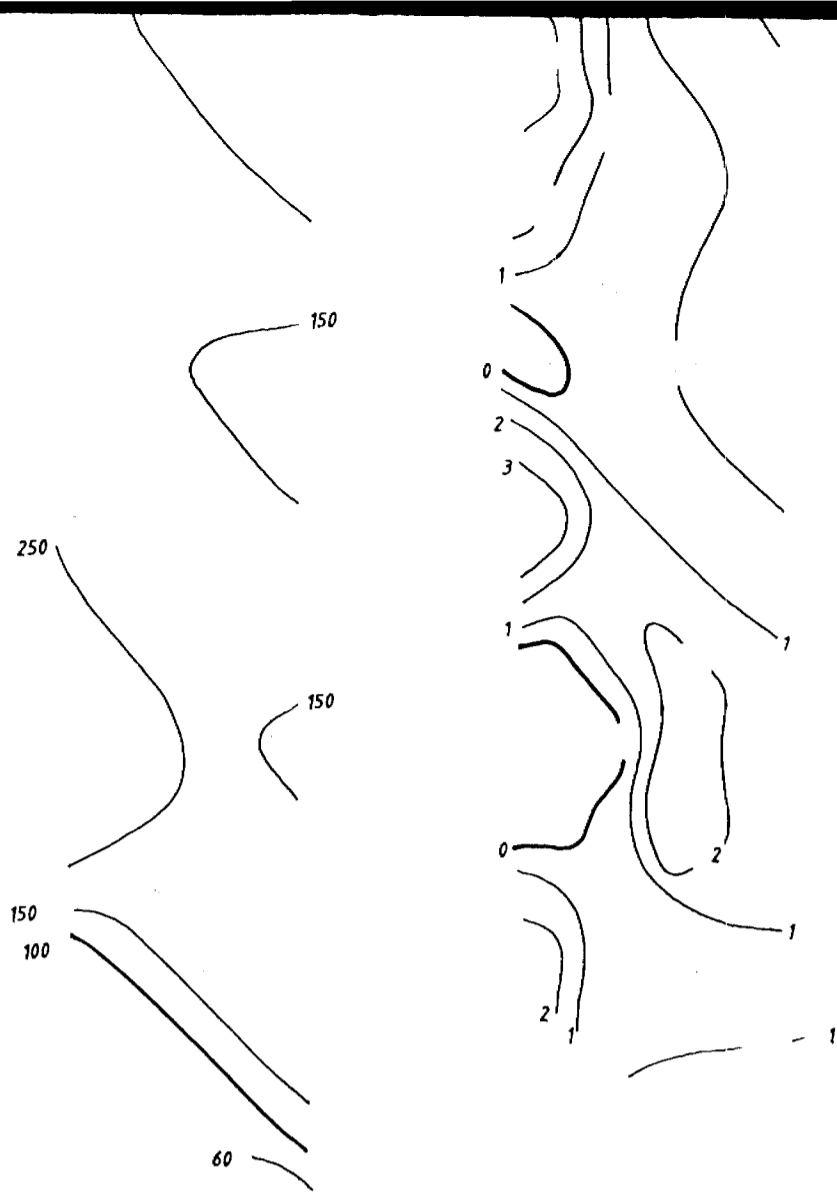
*Greg Hodges*

IP Coordinates for H- 2 to 5  
 1/2" Spacing - 25' M

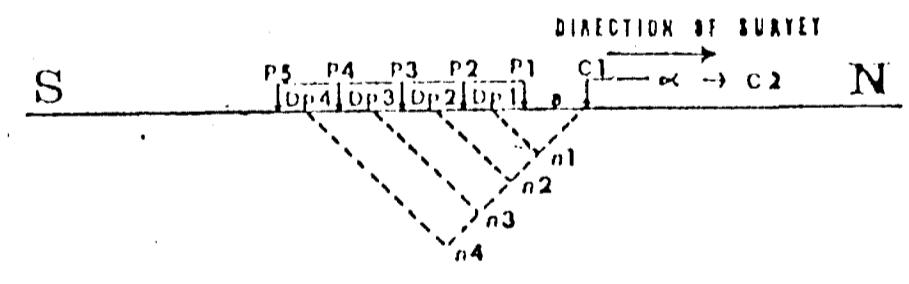
SECTION 1 OF 3







200  
 150  
 100  
 60  
 0  
 1  
 2  
 3  
 1  
 0  
 2  
 1  
 1



\*\*\*\*\*  
 R. S. MIDDLETON EXPLORATION  
 SERVICES, INC.  
 \*\*\*\*\*

*By Wodges*

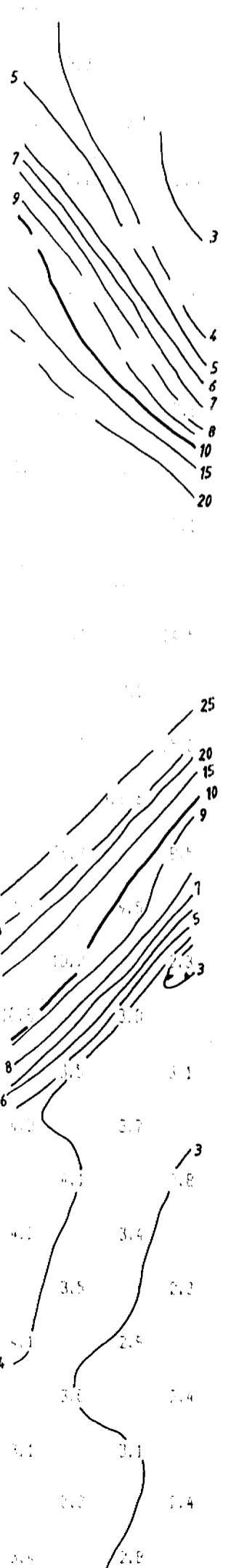
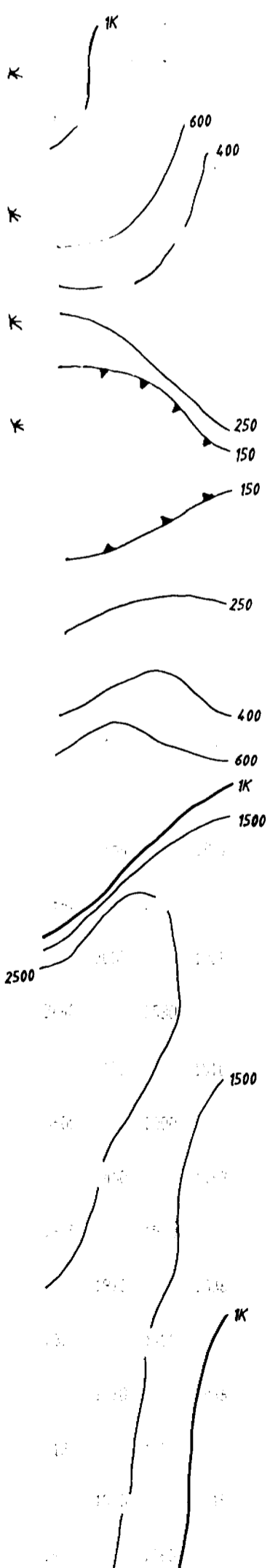
IP Pseudosections for N = 1 to 4  
 'a' Spacing = 25 M

LINE 42 I

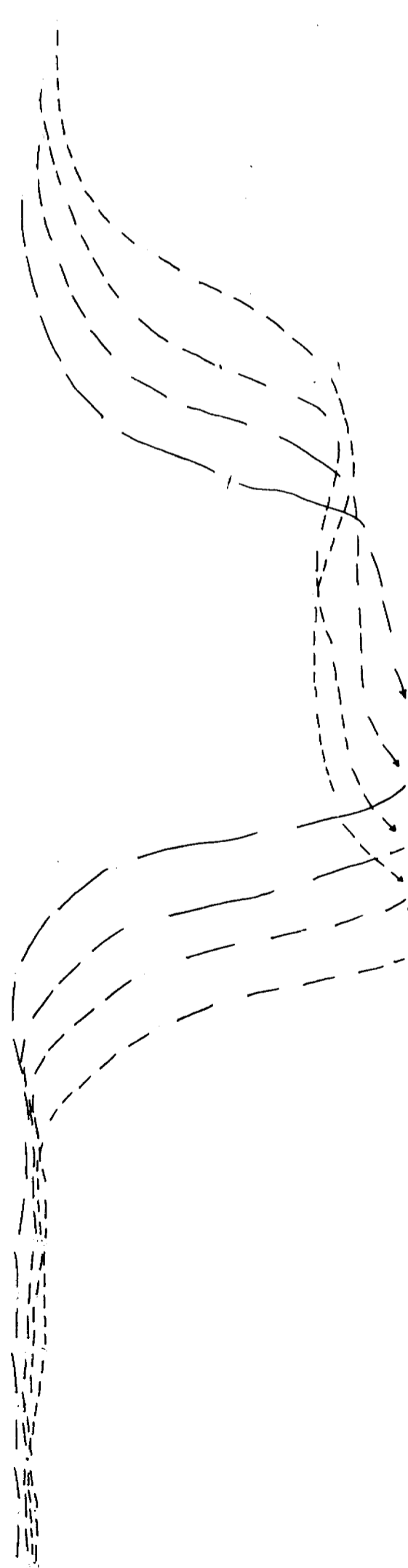
TEMPERATURE  
CONTOURS

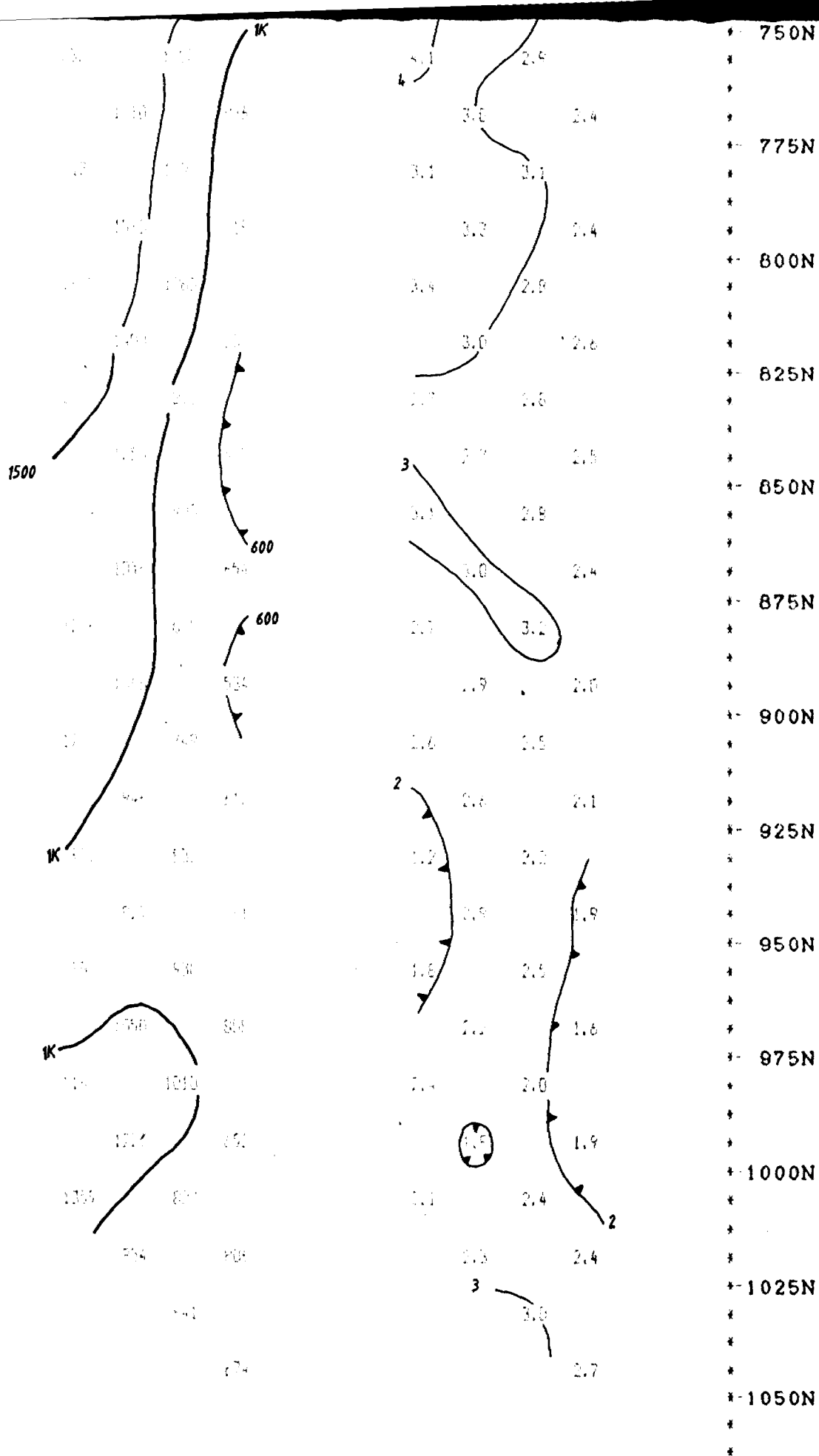
TEMPERATURE  
CONTOURS

-10 -5 0 5 10



425N  
450N  
475N  
500N  
525N  
550N  
575N  
600N  
625N  
650N  
675N  
700N  
725N  
750N  
775N  
800N



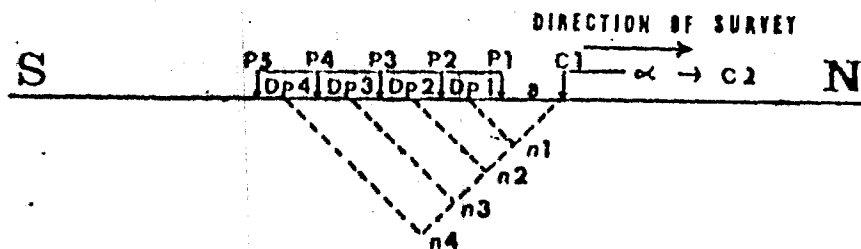


Property : MORIN  
 Client : UNIGOLD RESOURCES LTD.  
  
 Date of Survey : 11/11/86  
 Operator : KRJ  
 Electrode Array : POLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted

\*\*\*\*\*  
 R.B. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

IP Pseudosections for N = 2 to 5

'a' Spacing = 25 M



*Greg Bridges*



SCALE : 1 : 1250

RESISTIVITY  
(ohm - metres)

CHARGEABILITY  
(milliseconds)

CHARGEABILITY PROFILE

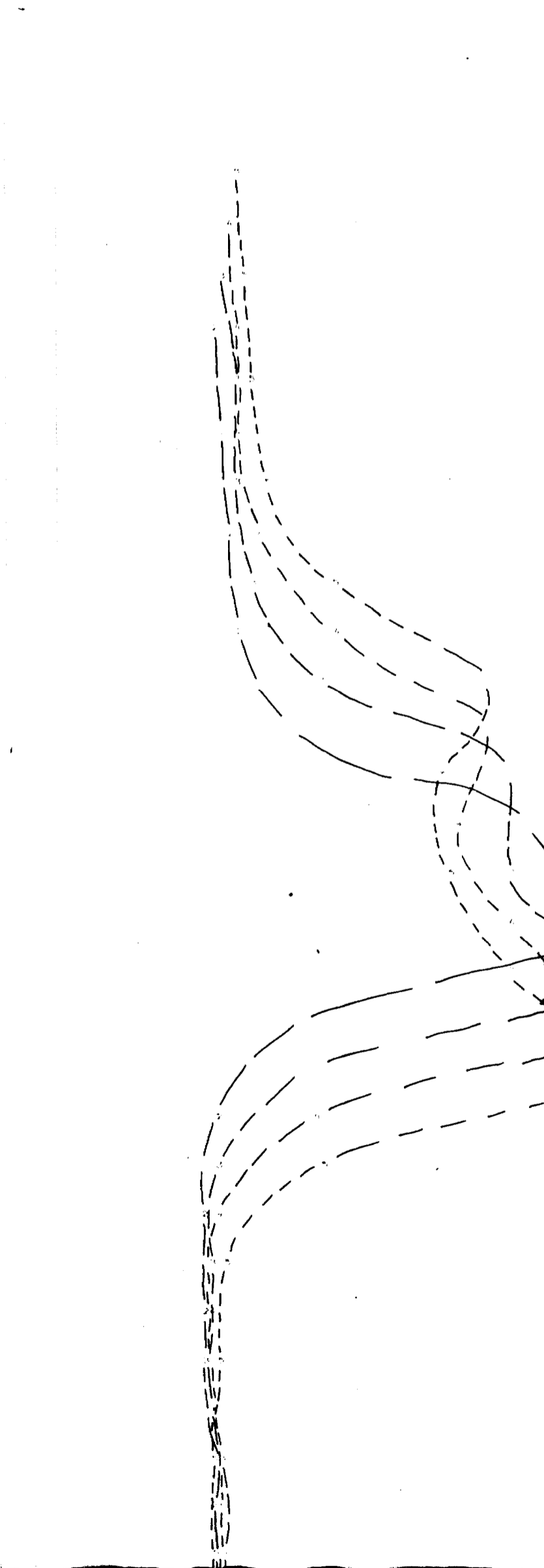
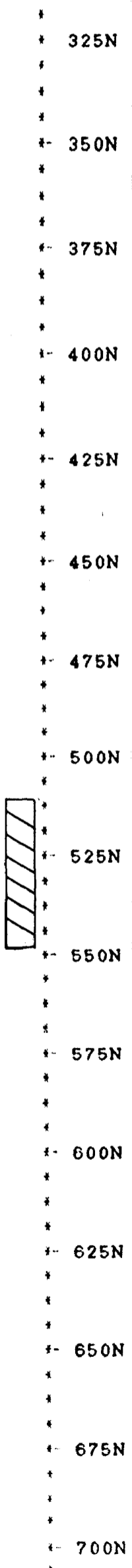
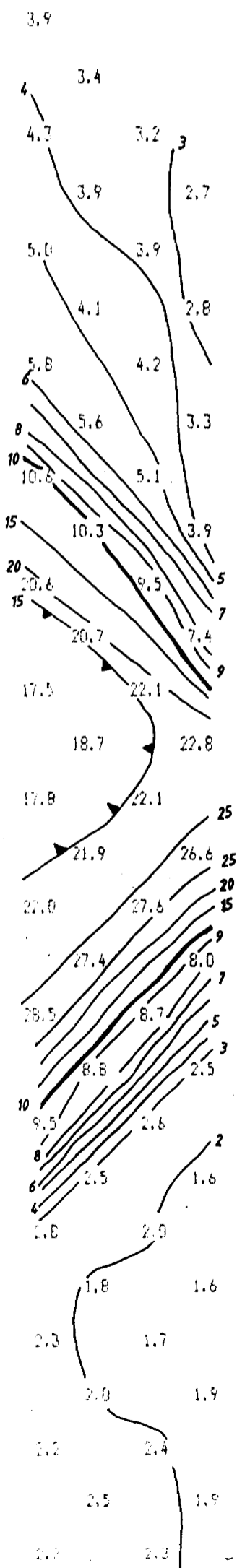
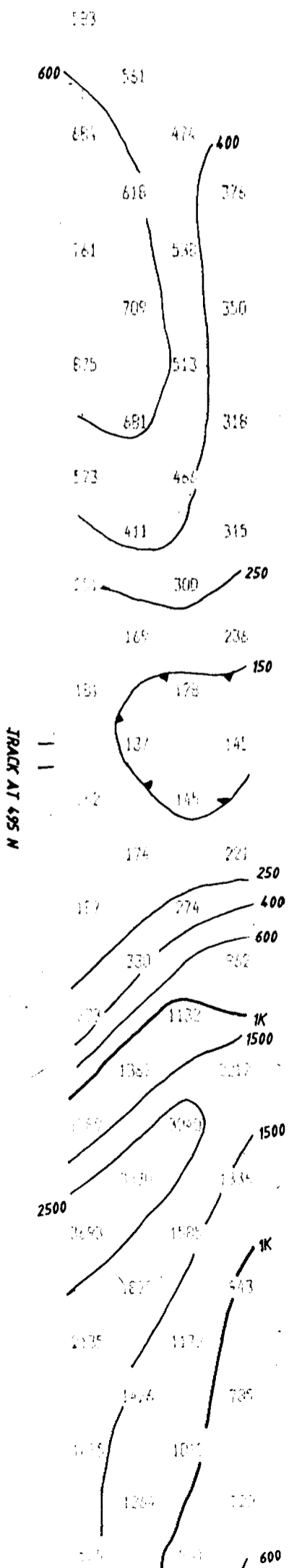
N 4      N 2

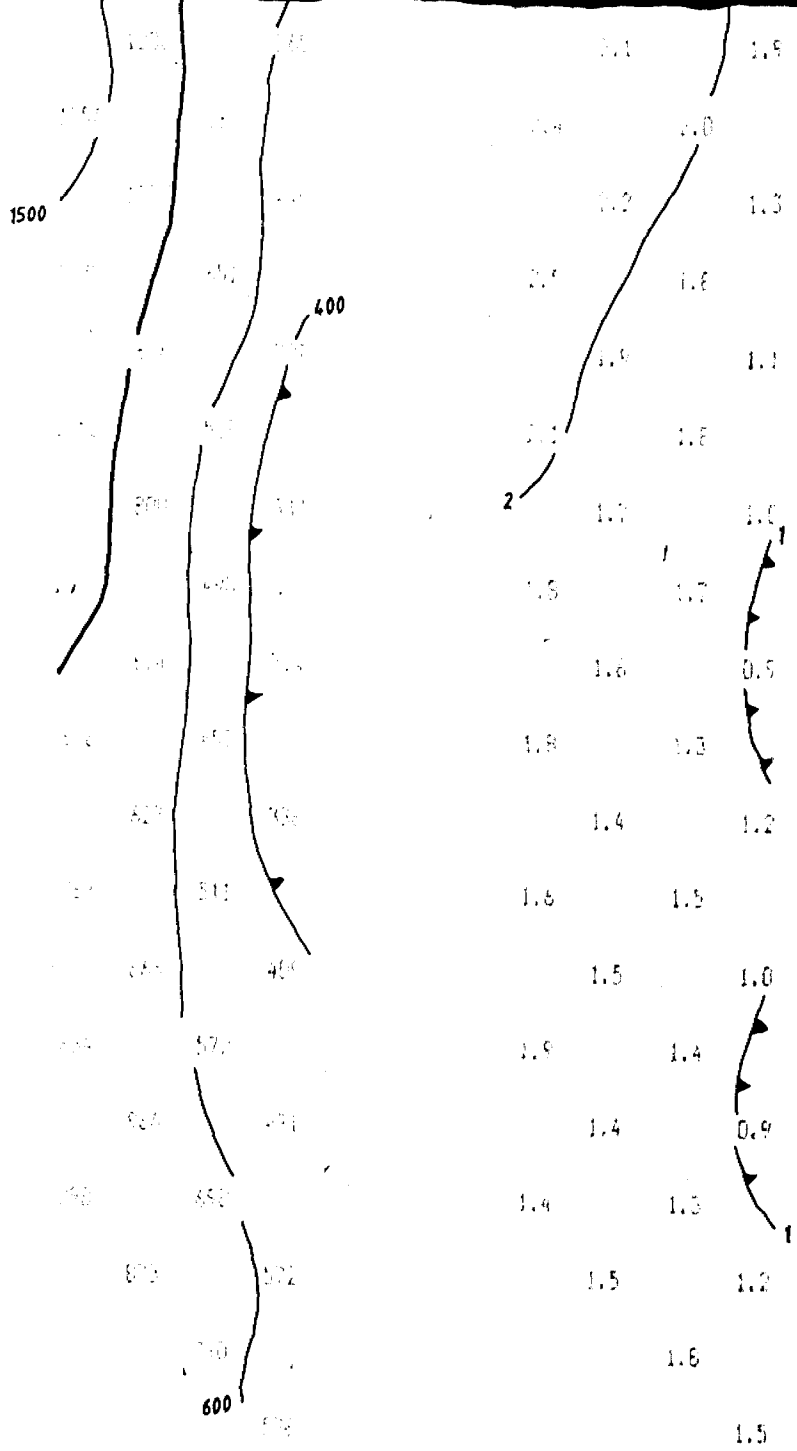
N 4      N 2

N 3

N 5      N 3

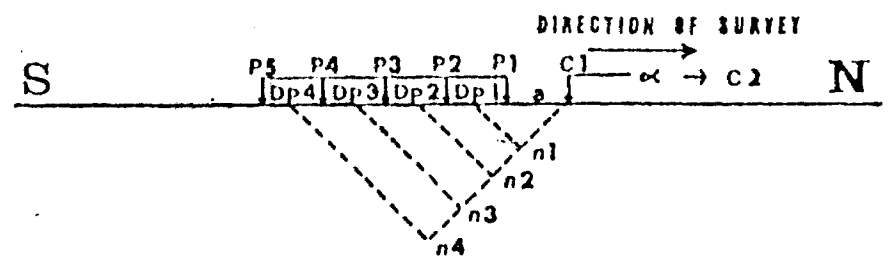
-10    -5    0    5    10    15    20





725N  
750N  
775N  
800N  
825N  
850N  
875N  
900N  
925N  
950N

Property : MORIN  
 Client : UNIGOLD RESOURCES LTD.  
 Date of Survey : 11/11/86  
 Operator : KRJ  
 Electrode Array : FOLE - DIFOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTEX IPR-11  
 Transmitter : PHOENIX IPE 1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 700 ms  
 Data B Z Plotted



\*\*\*\*\*  
 R.S. NEEDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

*Greg Hodges*

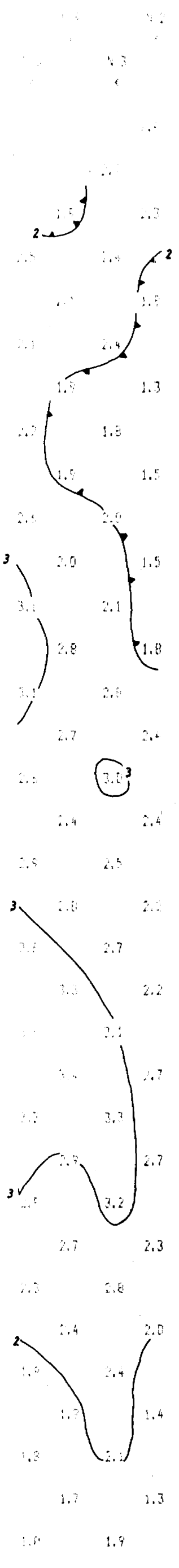
IP Parameters for N = 2 to 5  
 Δt = 50.000 = 25 M

CHARGE FILE 190 FILE



TRACK AT 2012 N

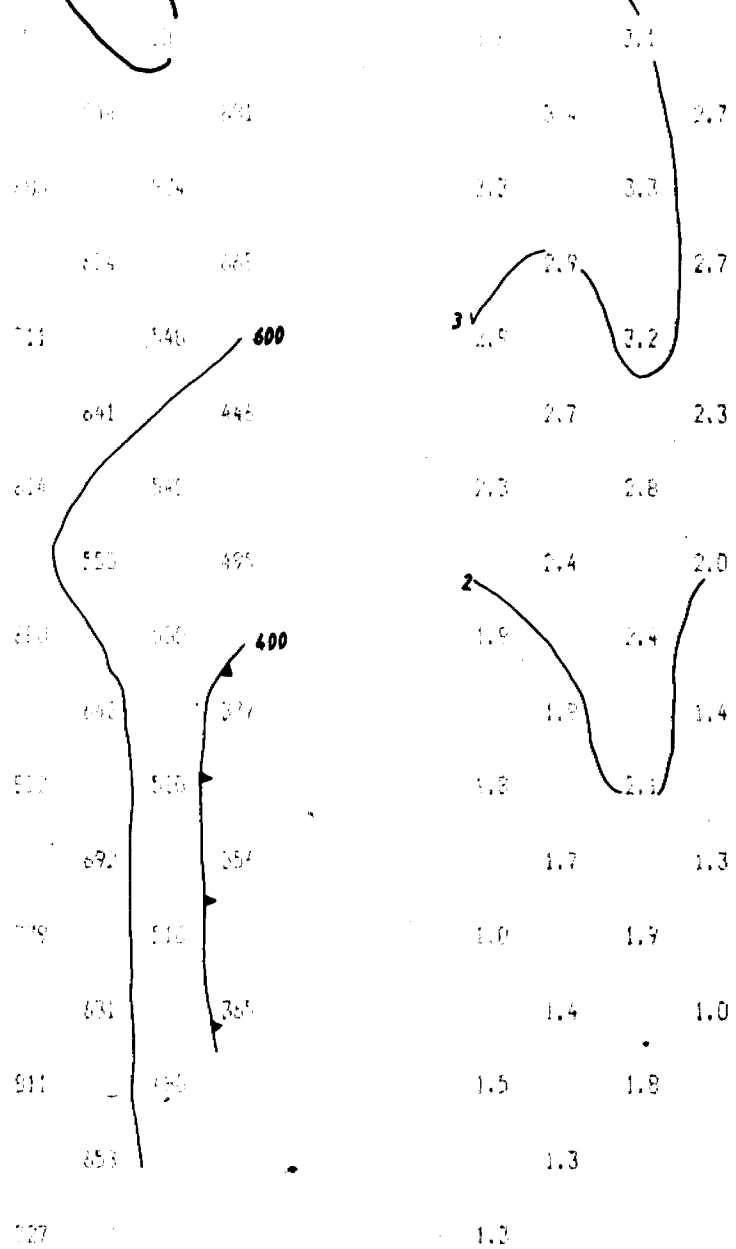
TRENCH AT 2240 N



- \* 1875N
- \* 1900N
- \* 1925N
- \* 1950N
- \* 1975N
- \* 2000N
- \* 2025N
- \* 2050N
- \* 2075N
- \* 2100N
- \* 2125N
- \* 2150N
- \* 2175N
- \* 2200N
- \* 2225N
- \* 2250N
- \* 2275N



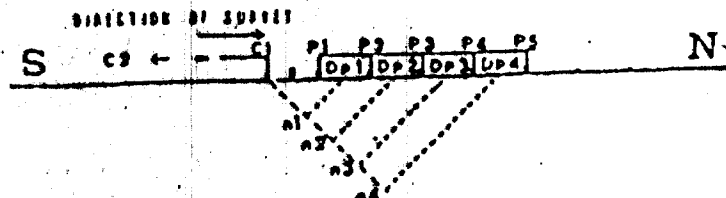
TRENCH AT 2240 N



\*  
 \* -2125N  
 \*  
 \*  
 \* -2150N  
 \*  
 \*  
 \* -2175N  
 \*  
 \*  
 \* -2200N  
 \*  
 \*  
 \* -2225N  
 \*  
 \*  
 \* -2250N  
 \*  
 \*  
 \* -2275N  
 \*  
 \*  
 \* -2300N  
 \*  
 \*  
 \*  
 \* -2325N

Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 11/11/86  
 Operator : KRJ  
 Electrode Array : POLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted



\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

*Greg Cooper*

IP Pseudosections for N = 2 to 5

'a' Spacing = 25 M

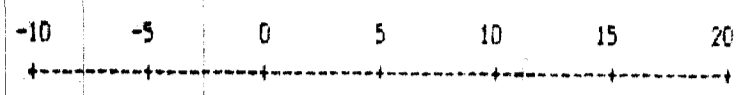
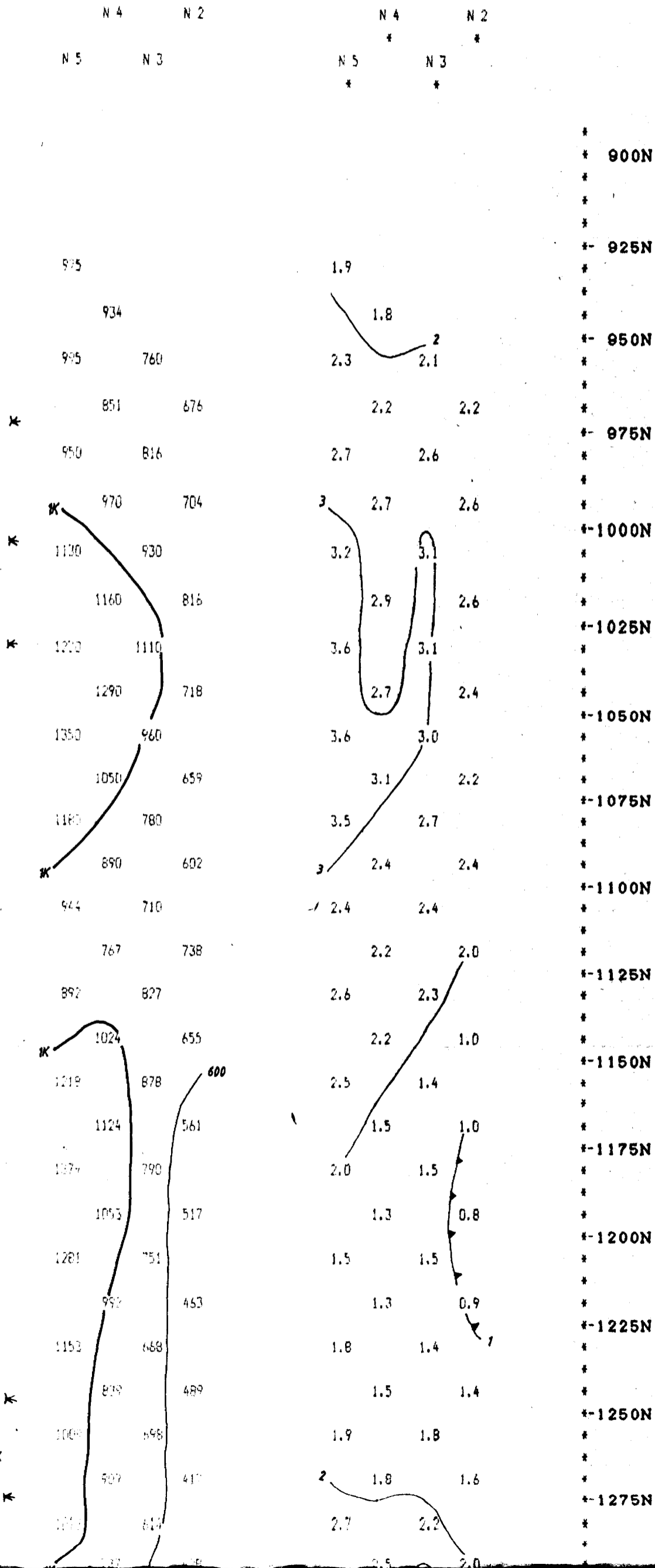
LINE 48 E

SCALE : 1 : 1250

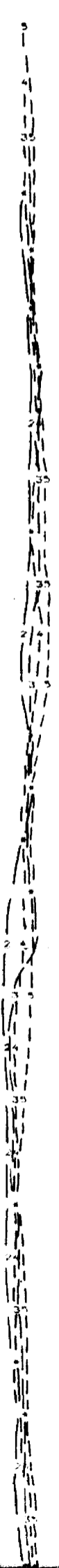
RESISTIVITY  
(ohm - metres)

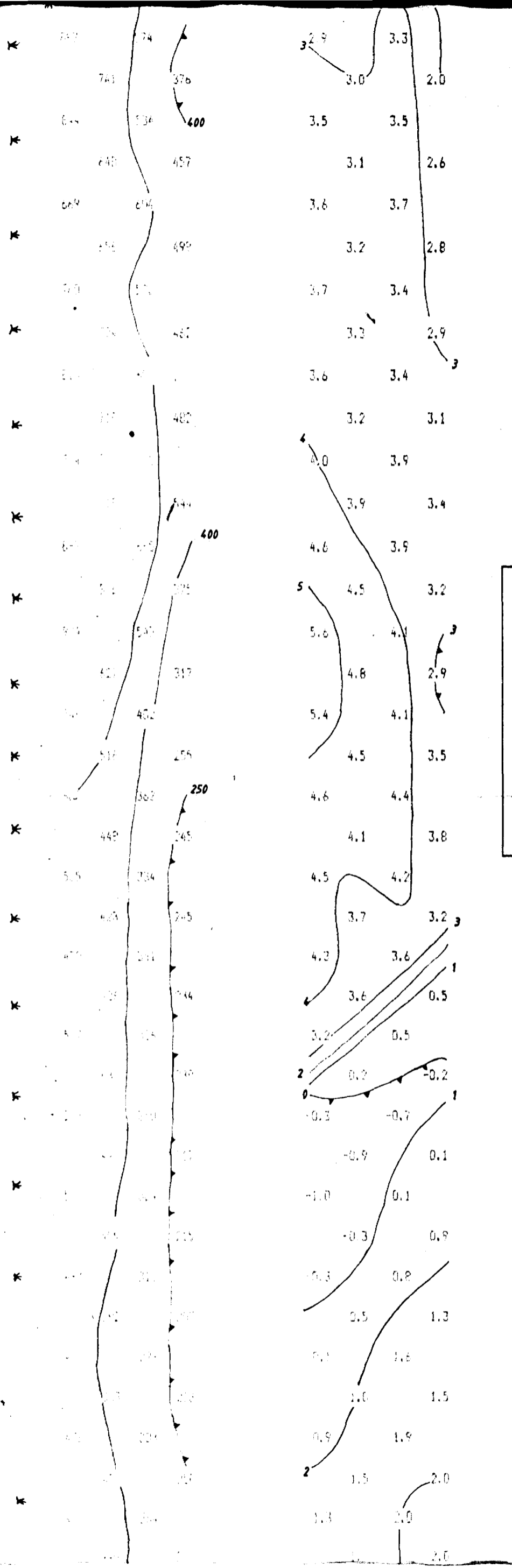
CHARGEABILITY  
(milliseconds)

CHARGEABILITY PROFILE

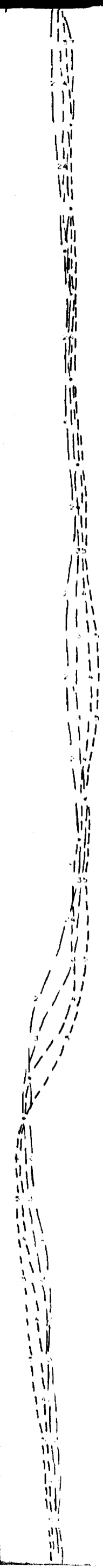


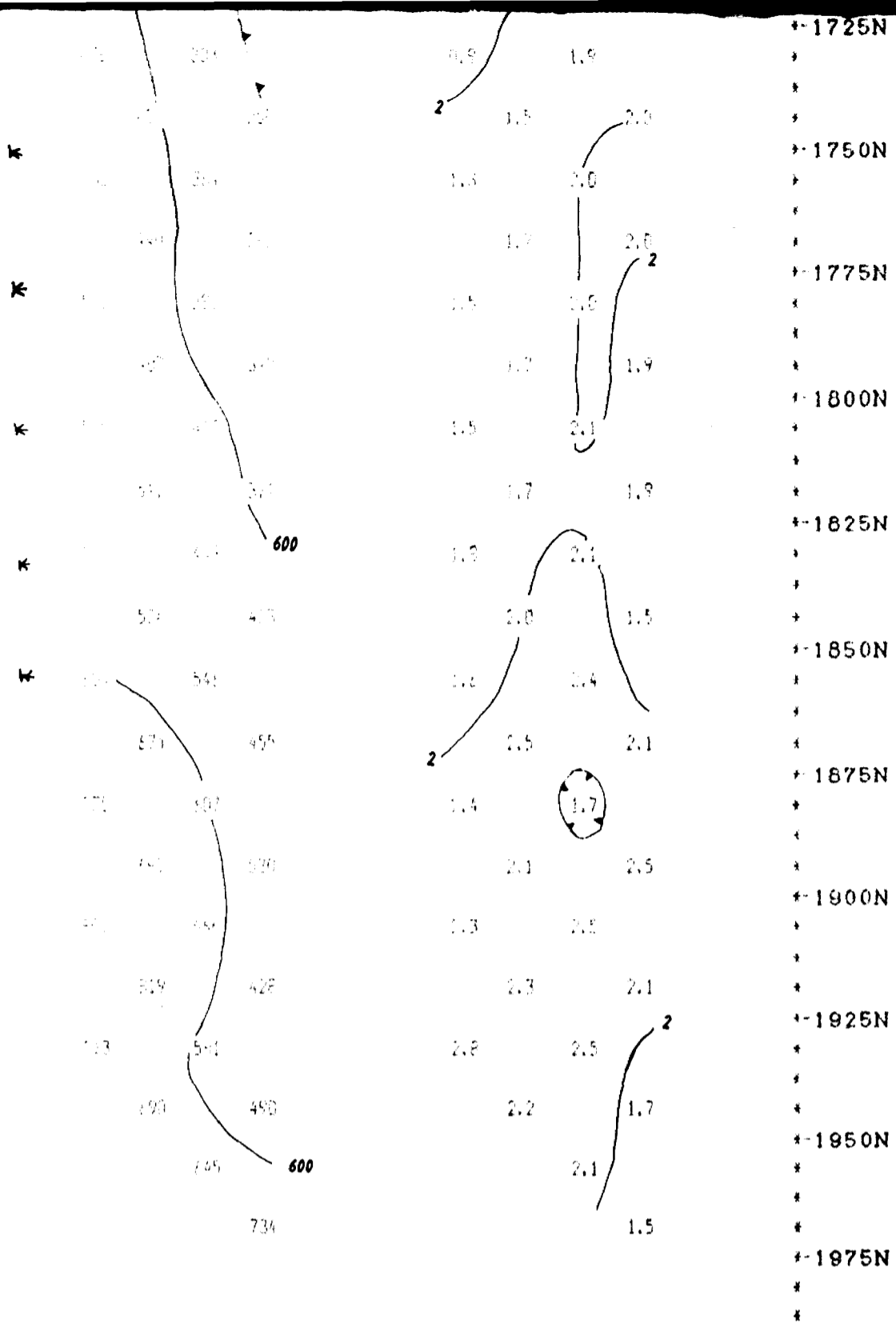
- \* 900N
- \* 925N
- \* 950N
- \* 975N
- \* 1000N
- \* 1025N
- \* 1050N
- \* 1075N
- \* 1100N
- \* 1125N
- \* 1150N
- \* 1175N
- \* 1200N
- \* 1225N
- \* 1250N
- \* 1275N





- \*-1300N
- \*-1325N
- \*-1350N
- \*-1375N
- \*-1400N
- \*-1425N
- \*-1450N
- \*-1475N
- \*-1500N
- \*-1525N
- \*-1550N
- \*-1575N
- \*-1600N
- \*-1625N
- \*-1650N
- \*-1675N
- \*-1700N
- \*-1725N
- \*-1750N





Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

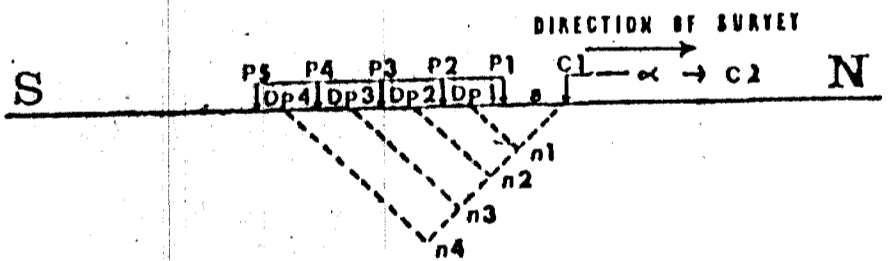
Date of Survey : 11/11/86  
 Operator : KRJ  
 Electrode Array : POLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 340 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted

\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

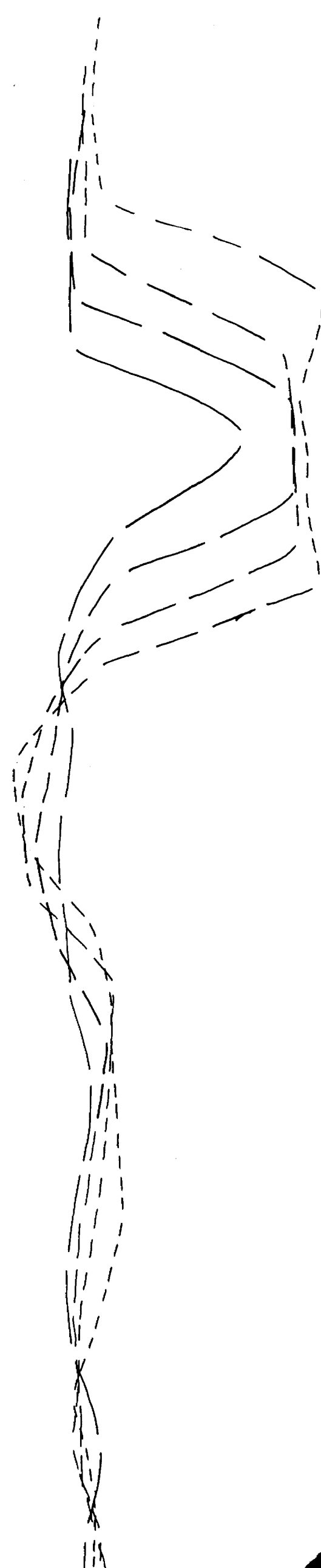
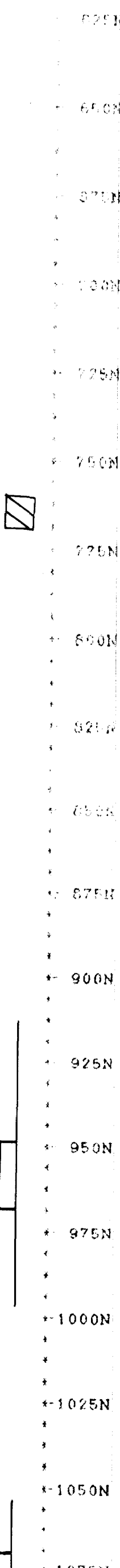
IP Pseudosections for N = 2 to 5

'a' Spacing = 25 M

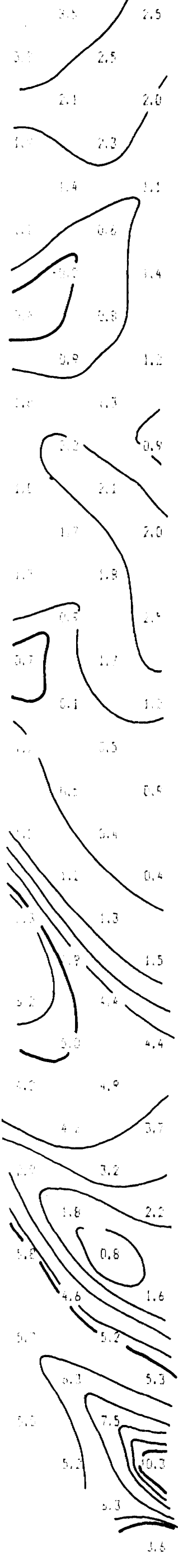
LINE 48 E



*Gray Hodges*







1100N  
1125N  
1150N  
1175N  
1200N  
1225N  
1250N  
1275N  
1300N  
1325N  
1350N  
1375N  
1400N  
1425N  
1450N  
1475N  
1500N  
1525N  
1550N



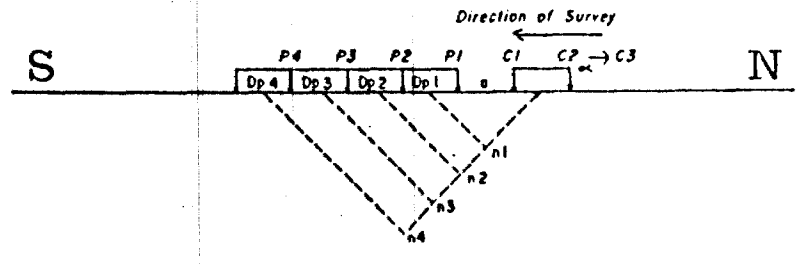


\*1325N  
 \*  
 \*1350N  
 \*  
 \*1375N  
 \*  
 \*1400N  
 \*  
 \*1425N  
 \*  
 \*1450N  
 \*  
 \*1475N  
 \*  
 \*1500N  
 \*  
 \*1525N  
 \*  
 \*1550N  
 \*



Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 28/10/86  
 Operator : KRJ  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse time : 2 Sec on 2 Sec off  
 Delay time : 360 ms  
 Integration time : 780 ms  
 Site # 7 Picted

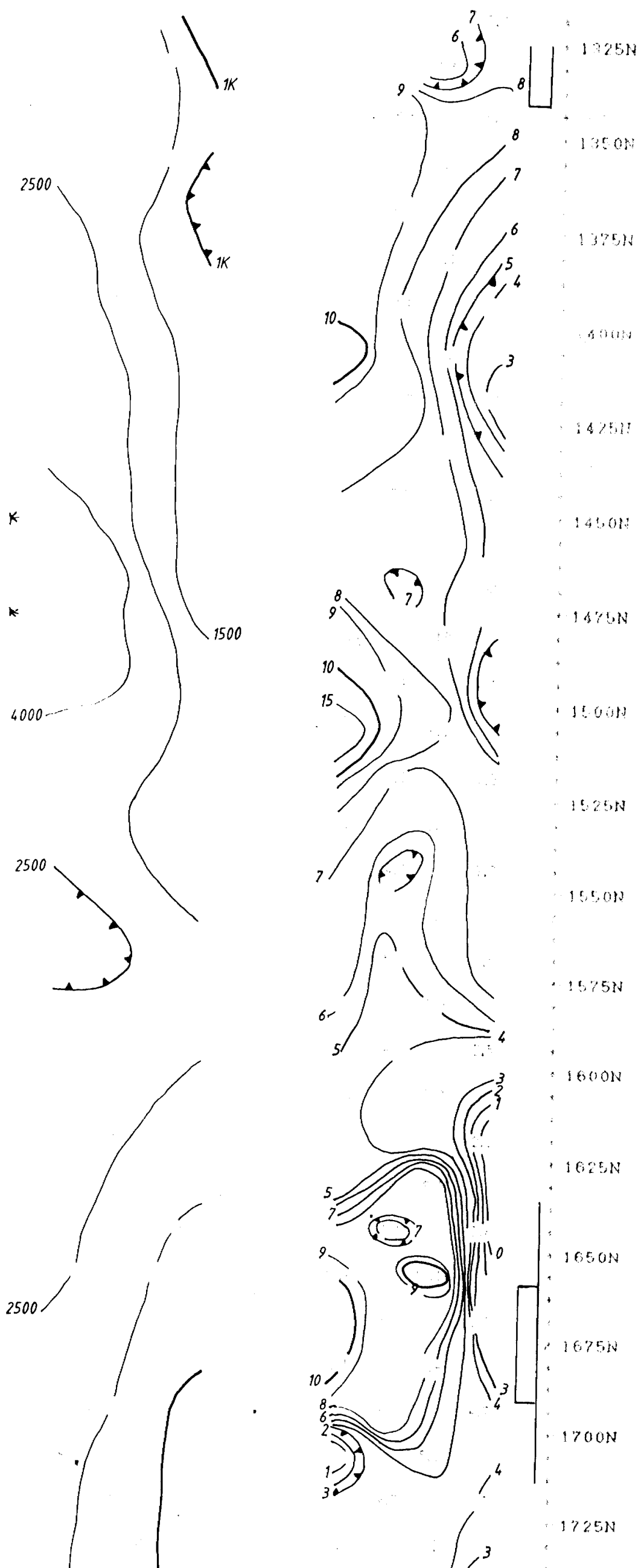


\*\*\*\*\*  
 R.S. MIDDLTON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

IP Pseudosections for N = 1 to 4  
 'a' Spacing = 25 M

LINE 30 E

7766.C



2500

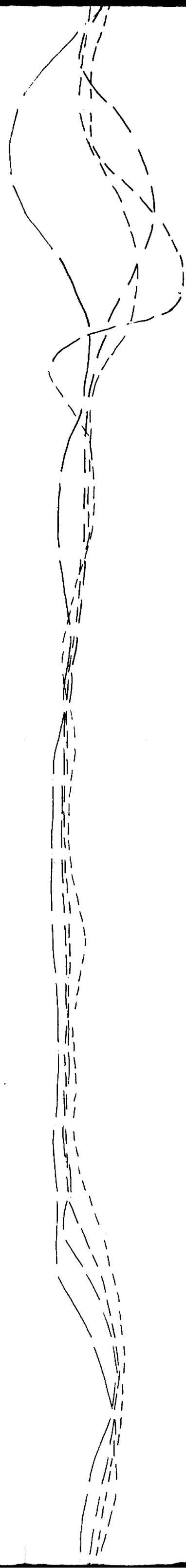
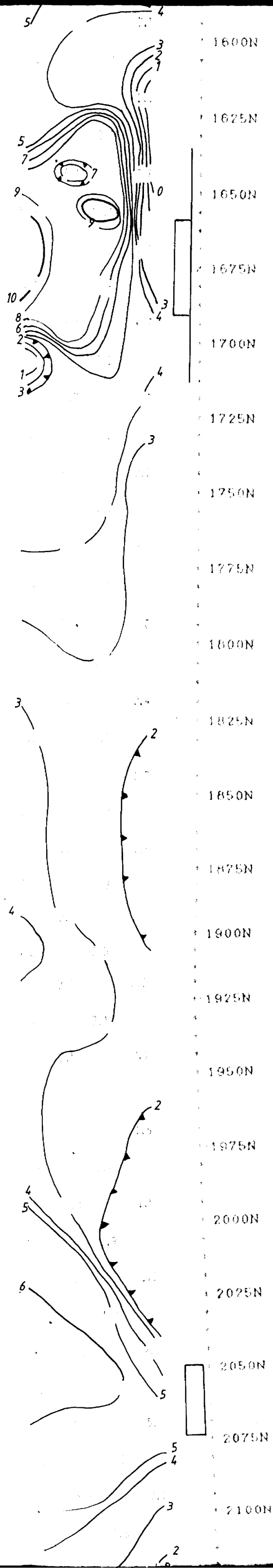
1500

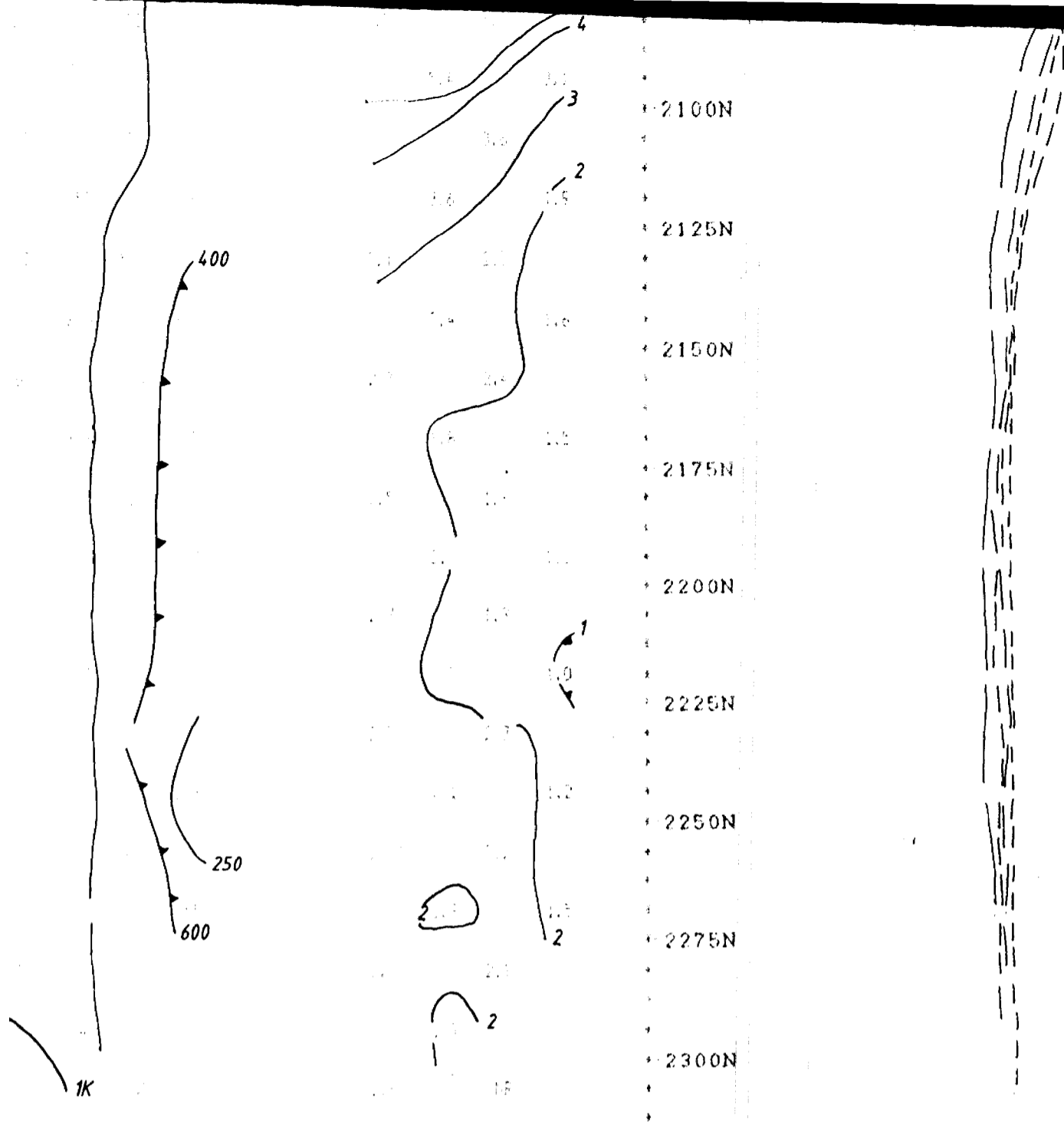
600

400

250

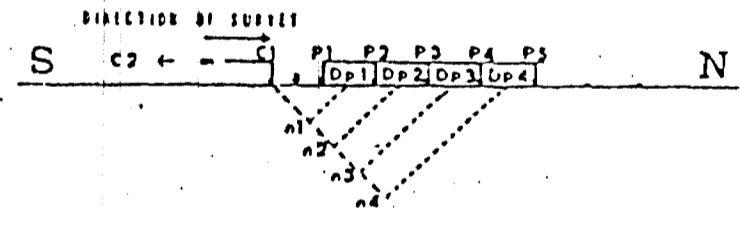
1K





Property : PHOENIX EXPLORATION  
 (owned) : BRIDGE RESOURCES LTD.

Date of Report : 3/11/86  
 Operator : J.B.  
 Electrode Array : POLE DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : GINNEY IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 750 ms  
 Integration Time : 780 ms  
 Slice # 2 Plotted



\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

IP Pseudosections for N = 1 to 4

20' Spacing = 25 M

100L 37 E

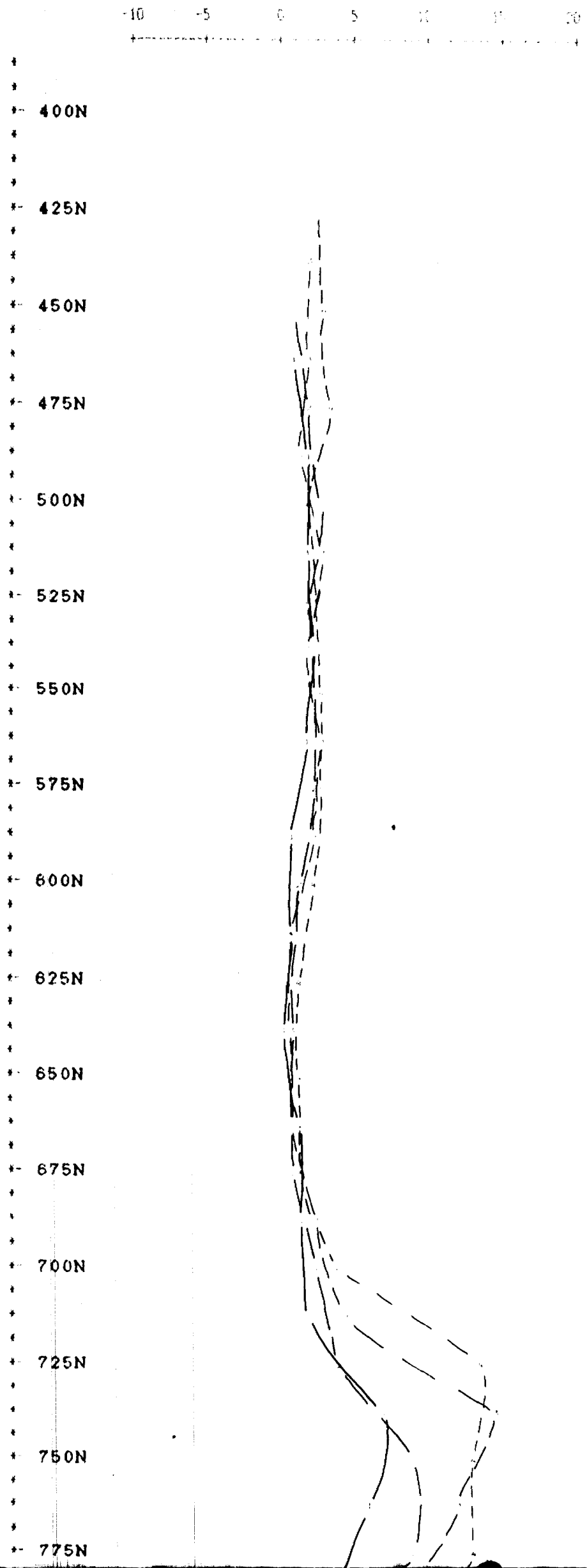
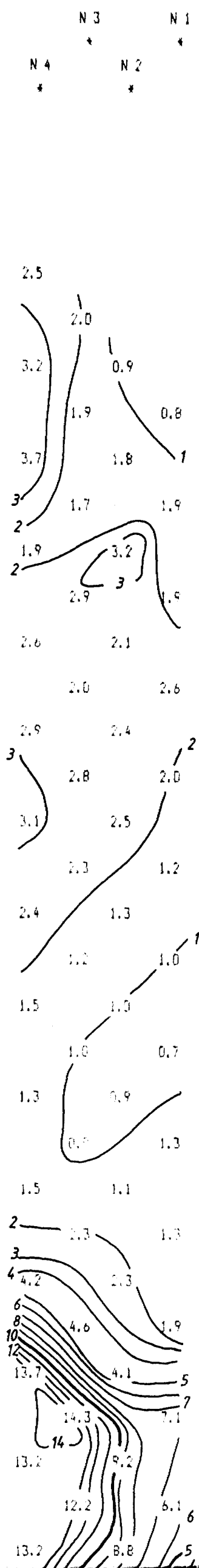
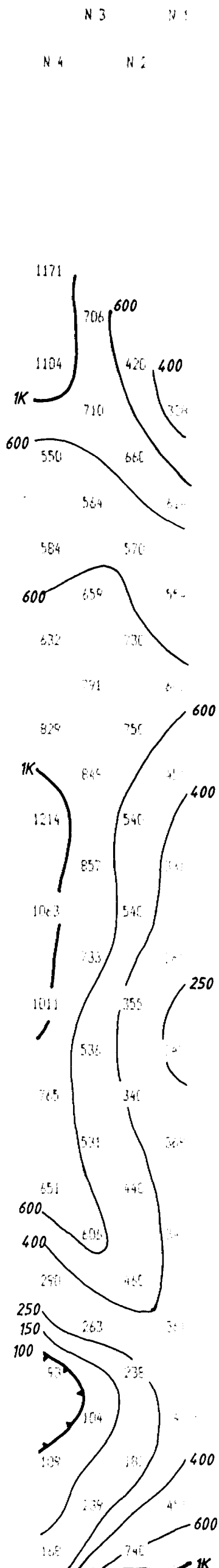
9744

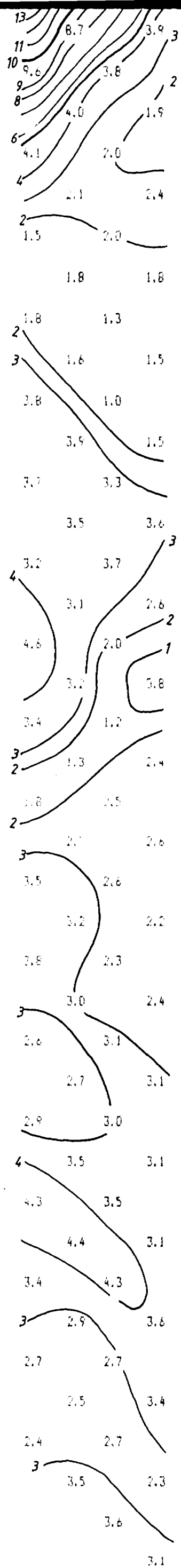
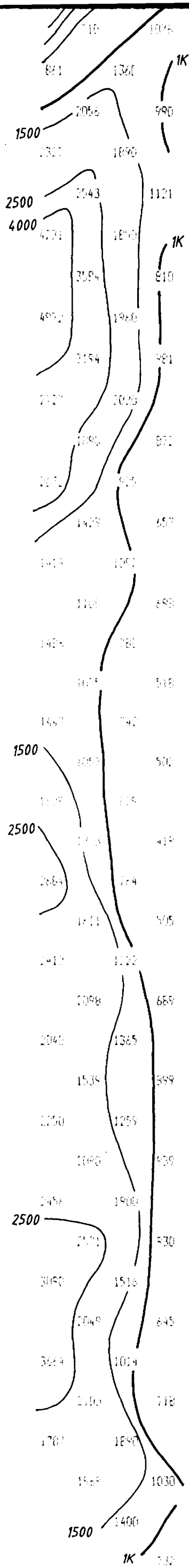
SCALE : 1 : 1250

RESISTIVITY  
(ohm - metres)

CHARGEABILITY  
(milliseconds)

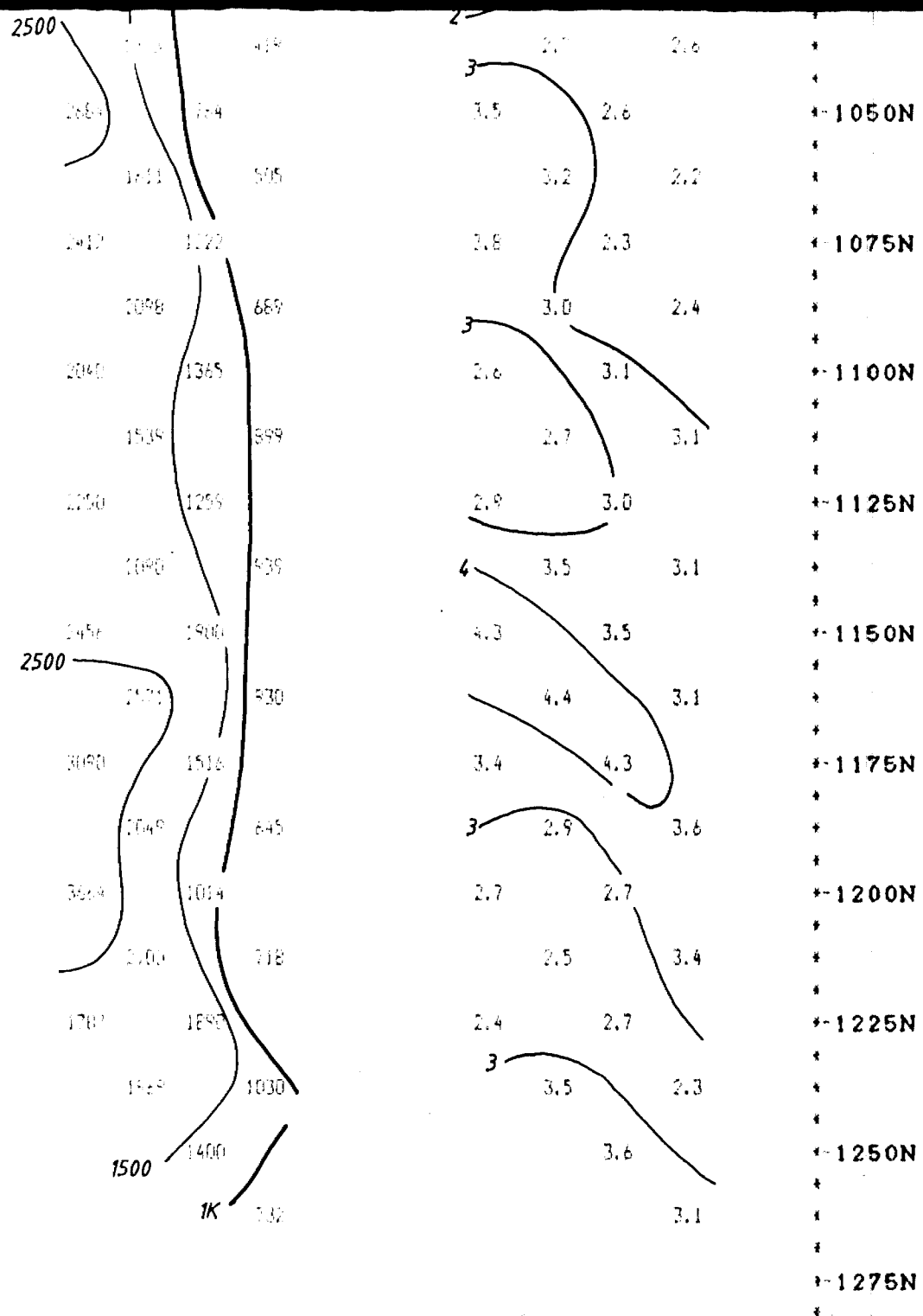
CHARGEABILITY PROFILE





- 800N
- 825N
- 850N
- 875N
- 900N
- 925N
- 950N
- 975N
- 1000N
- 1025N
- 1050N
- 1075N
- 1100N
- 1125N
- 1150N
- 1175N
- 1200N
- 1225N
- 1250N
- 1275N

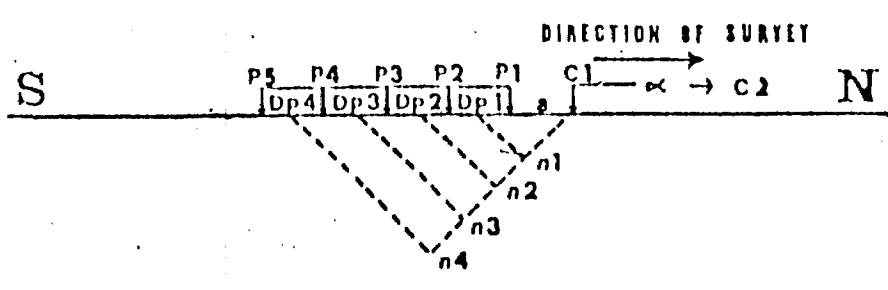




ROAD AT 1300 N

Property : MORIN PROPERTY  
 Client : UNIGOLD RESOURCES LTD.

Date of Survey : 20/10/86  
 Operator : CDJ  
 Electrode Array : DIPOLE - DIPOLE  
 Mode : TIME DOMAIN  
 Receiver : SCINTREX IPR-11  
 Transmitter : PHOENIX IPT-1  
 Pulse Time : 2 Sec on 2 Sec off  
 Delay Time : 360 ms  
 Integration Time : 780 ms  
 Slice # 7 Plotted



\*\*\*\*\*  
 R.S. MIDDLETON EXPLORATION  
 SERVICES INC.  
 \*\*\*\*\*

JP Pseudosections for N = 1 to 4  
 'a' Spacing = 25 M

7740 P



MINING LANDS: PLEASE COMPLETE THIS  
TO THE GEOSCIENCE DI



42B01NE0008 2.9744 REEVES

900

DATE REMOVED: Nov. 3/87  
(from GDC)

DATE RETURNED: \_\_\_\_\_  
(to GDC)

REPORT # : 2-9744

FICHE NO. : \_\_\_\_\_ (where applicable)

REASON FOR REQUESTING REPORT (complete #1-4 below):

1. INFORMATION ADDED TO EXISTING PAGES OF REPORT:

IF YES, SPECIFY PAGES: \_\_\_\_\_  
: \_\_\_\_\_  
: \_\_\_\_\_

2. a) PAGES/MAPS ADDED TO THIS REPORT: \_\_\_\_\_ TOTAL PAGES ADDED  
: \_\_\_\_\_ TOTAL MAPS ADDED

b) TYPE OF PGS ADDED: \_\_\_\_\_ CORRESPONDENCE  
: \_\_\_\_\_ WORK REPORTS (AMENDED)  
: \_\_\_\_\_ WORK RPTS (NEW)  
: \_\_\_\_\_ MISSING PAGES OF TEXT  
: \_\_\_\_\_ OTHER (PLEASE SPECIFY)

3. a) REMOVAL OF PGS FROM REPORT: \_\_\_\_\_ TOTAL PGS REMOVED

b) TYPE OF PAGES REMOVED : \_\_\_\_\_ CORRESPONDENCE  
: \_\_\_\_\_ WORK REPORTS  
: \_\_\_\_\_ PGS OF TEXT  
: \_\_\_\_\_ OTHER (PLEASE SPECIFY)

4. REPORT NEEDED FOR REFERENCE ONLY:

NO INFORMATION ALTERED :

NO INFORMATION ADDED :

NO INFORMATION DELETED :

\*NOTE: ENTER "X" IN APPLICABLE BOXES

*Unigold*

**INVOICE**

**E-LABORATORIES LTD.**  
05 WEST 15TH STREET  
NORTH VANCOUVER, B.C.  
CANADA V7M 1T2

**MIN-LV Laboratories Ltd.**

**INVOICE No 3003B**  
**DATE: NOV 20/86**

05 WEST 15TH STREET,  
NORTH VANCOUVER, B.C. CANADA V7M 1T2  
TELEPHONE (604) 980-5812

PHONE: (604) 980-5814 DR 988-4524  
TELEX: 104-352828

**TO : DURHAM GEOLOGICAL SERVICES**  
BOX 734,  
TIMMINS, ONT.

**FILE No: 62-558**  
**PROJECT:**

**ANALYTICAL REPORT**

**ATTENTION B. DURHAM/B. BARNES**

QTY DESCRIPTION	UNIT PRICE	AMOUNT
14 ROCK GEOCHEM - AS, FIRE AU	10.000	140.00
14 ROCK SAMPLE PREP	2.50	35.00
<b>* TOTAL</b>		<b>175.00</b>

Created by: Durham Geological  
 Report on: 14 rocks  
 Samples: Geochem samples  
 Assay samples

**RECEIVED**

MAY 21 1987

**Mining Lands Section**

THESE ARE PROFESSIONAL SERVICES AND ARE PAYABLE WHEN RENDERED.  
OVER 30 DAYS 2% INTEREST PER MONTH WILL BE CHARGED.

*Paid B&B*

SPECIALS IN MINERAL IMPROVEMENTS

INVOICE

*Unigold*

INVOICE No 2865B

DATE: NOV 3/86

LABORATORIES LTD.  
5TH STREET  
VANCOUVER, B.C.  
CANADA V7M 1T2

604-980-5814 DR 980-4524  
TELEX: 04-352828

TO : DURHAM GEOLOGICAL SERVICES  
BOX 734,  
TIMMINS, ONT.

FILE No: 62-509  
PROJECT:

ATTENTION B. BARNES

QTY DESCRIPTION	UNIT PRICE	AMOUNT
24 ROCK GEOCHEM - AS	3.50	84.00
24 ROCK GEOCHEM - FIRE AU	6.50	156.00
24 ROCK SAMPLE PREP	2.50	60.00
* TOTAL		300.00

RECEIVED

MAY 21 1987

MINING LANDS SECTION

THESE ARE PROFESSIONAL SERVICES AND ARE PAYABLE WHEN RENDERED.  
OVER 30 DAYS 2% INTEREST PER MONTH WILL BE CHARGED.

*Paid Bill*

INVOICE

*Un. gold* ✓

...S LTD.  
...REET  
...B.C.  
...IT2

INVOICE No 2860B

DATE: NOV 1/86

OR 988-4524  
352828

NOV 7 1986

...HAM GEOLOGICAL SERVICES  
...X 734.  
...IMMINS, ONT.

FILE No: 62-505  
PROJECT:

...TENTION BRUCE BARNES

QTY DESCRIPTION	UNIT PRICE	AMOUNT
54 ROCK GEOCHEM - AS, FIRE AU	10.00	540.00
54 ROCK SAMPLE PREP	2.50	135.00
* TOTAL		675.00

RECEIVED

MAY 21 1987

MINING LANDS SECTION

THESE ARE PROFESSIONAL SERVICES AND ARE PAYABLE WHEN RENDERED.  
OVER 30 DAYS 2% INTEREST PER MONTH WILL BE CHARGED.

*Paid BH*

*Unpaid*

# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187 HAILEYBURY, ONTARIO TEL: (705) 672-3107  
POJ 1K0

Geological Services Inc.

NS, Ontario  
7G2

INVOICE No 21661

ORDER NO.

DATE October 16, 1986

CERTIFICATE NO.	DATE	DESCRIPTION	AMOUNT
1690	Oct. 16/86	34 Au @ \$8.50 34 Sample Preparations @ \$2.50	\$ 289.00 85.00 <hr/> \$ 374.00

*Paid  
BH*

*Chapgold*

# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187 HAILEYBURY, ONTARIO TEL: (705) 672-3107  
POJ 1KO

Geological Services Inc.

34  
INS, Ontario  
7G2

INVOICE N<sup>o</sup> 21639

ORDER NO.

DATE October 15, 1986

CERTIFICATE NO.	DATE	DESCRIPTION	AMOUNT
1667	Oct. 15/86	1 Zn @ \$2.00 1 Ag @ \$1.00	\$ 2.00 <u>1.00</u> \$ 3.00

*Paich  
BH*

*Unigold.*

# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187 HAILEYBURY, ONTARIO TEL: (705) 672-3107  
POJ 1KO

Geological Services Inc.  
4  
NS, Ontario  
7G2

INVOICE N<sup>o</sup> 21595

ORDER NO.

DATE October 9, 1986

CERTIFICATE NO.	DATE	DESCRIPTION	AMOUNT
1629	Oct. 9/86	43 Au @ \$8.50 43 Sample Preparations @ \$2.50	\$ 365.50 <hr/> 107.50 <hr/> \$ 473.00

*Paid  
BH*

*Unigold Mining*

# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187 HAILEYBURY, ONTARIO TEL: (705) 672-3107  
POJ 1K0

Unigold Geological Services Inc.  
734  
MINNS, Ontario  
4N 7G2

INVOICE No 21562

ORDER NO.

DATE October 7, 1986

CERTIFICATE NO.	DATE	DESCRIPTION	AMOUNT
1595	Oct. 7/86	17 Au @ \$8.50 17 Sample Preparations @ \$2.50	\$ 144.50 42.50 <hr/> \$ 187.00

*Paid  
BH*



*Ungedol Morin*

**BELL - WHITE ANALYTICAL LABORATORIES LTD.**

P.O. BOX 187 HAILEYBURY, ONTARIO TEL: (705) 672-3107  
POJ 1K0

Geological Services Inc.

34  
INS, Ontario  
762

INVOICE N<sup>o</sup> 21541

ORDER NO.

DATE October 6, 1986

CERTIFICATE NO.	DATE	DESCRIPTION	AMOUNT
1584	Oct. 6/86	13 Au @ \$8.50 13 Sample Preparations @ \$2.50	\$ 110.50 32.50 <hr/> \$ 143.00

*Paid  
Bk*

INVOICE

*Unigold*

IES LTD.  
STREET  
VER, B.C.  
V7M 1T2

INVOICE No 2822B

DATE: OCT 28/86

80-5814 OR 988-4524  
TELEX: 04-352828

DURHAM GEOLOGICAL SERVICES  
BOX 734,  
TIMMINS, ONT.

FILE No: 62-486  
PROJECT:

ATTENTION B. BARNES

QTY DESCRIPTION	UNIT PRICE	AMOUNT
24 ROCK GEOCHEM - FIRE AU	6.50	156.00
1 ROCK GEOCHEM - FIRE AU	6.50	6.50
24 ROCK GEOCHEM - AS	3.50	84.00
24 ROCK SAMPLE PREP	2.50	60.00
* TOTAL		306.50

THESE ARE PROFESSIONAL SERVICES AND ARE PAYABLE WHEN RENDERED.  
OVER 30 DAYS 2% INTEREST PER MONTH WILL BE CHARGED.

*Paid B.R.*

*Samples - 1667-1691 inst. - B.R.*

Unygold - ✓

# DELL - WHITE ANALYTICAL LABORATORIES LTD.

O. BOX 187 HAILEYBURY, ONTARIO TEL: (705) 672-3107  
POJ 1KO

4. ✓  
3. ✓  
473. ✓  
187. ✓  
143. ✓  
1 323. \*  
1 323. \*  
-----  
1 323. \*

Services Inc.

INVOICE No 21732

ORDER NO.

DATE October 24, 1986

CERTIFICATE NO.	DATE	DESCRIPTION	AMOUNT
1758	Oct. 24/86	13 Au @ \$8.50 13 Sample Preparations @ \$2.50	\$ 110.50 32.50 <hr/> \$ 143.00

*Partial Bill*

MIN-EN LABORATORIES LTD.

Specialists in Mineral Environments

705 West 15th Street North Vancouver, B.C. Canada V7M 1T2

PHONE: (604) 5814 DR (604) 988-4524

TELEX: VIA USA 7601067 UC

Certificate of GEOCHEM

Company: DURHAM GEOLOGICAL SERVICES  
Project:  
Attention: B. BARNES

File: 62-486R  
Date: OCT 28/86  
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM
1667	6
1668	2
1669	4
1670	14
1671	1
1672	4
1673	1
1674	1
1675	1
1676	5
1677	7
1678	1
1679	1
1680	1
1681	1
1682	16
1683	84
1685	11
1686	2
1687	36
1688	1
1689	1
1690	1
1691	1

Certified by \_\_\_\_\_



MIN-EN LABORATORIES LTD.

MIN-EN LABORATORIES LTD.

Specialists in Mineral Environments

705 West 15th Street North Vancouver, B.C. Canada V7M 1T2

PHONE: (604) 987-5814 OR (604) 988-4524

TELEX: VIA USA 7601067 UC

Certificate of GEOCHEM

Company: DURHAM GEOLOGICAL SERVICES

File: 62-486

Project:

Date: OCT 27/86

Attention: B. BARNES

Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AU-FIRE PPB	AU-FIRE PPB
---------------	-------------	-------------

1667	7	
1668	3	
1669	4	
1670	5	
1671	71	

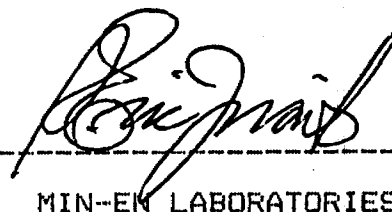
1672	3	
1673	53	
1674	2	
1675	4	
1676	3	

1677	44	
1678	390	365
1679	2	
1680	4	
1681	2	

1682	7	
1683	3	
1685	1	
1686	24	
1687	26	

1688	5	
1689	7	
1690	3	
1691	4	

Certified by



MIN-EN LABORATORIES LTD.

\*\*\*\* Certificate of GEOCHEM \*\*\*\*

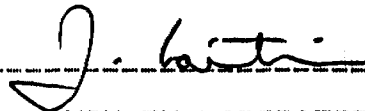
Company: DURHAM GEOLOGICAL  
Project:  
Attention: BRUCE BARNES

File: 62-505/P2  
Date: NOV 1/86  
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-FIRE PPB
1868	3	3
1869	11	2
1870	27	8
1871	2	2
1876	4	2
1877	4	1
1878	4	1
1879	2	1
1880	5	4
1881	3	2
1882	2	4
1883	1	3
1884	1	2
1885	1	5
1886	5	5
1889	4	3
1890	14	2
1891	50	8
1892	5	2
1893	6	2
1894	4	3
1937	10	1
1938	7	2
1939	4	2

Certified by



MIN-EN LABORATORIES LTD.

*Unigobal*

\*\*\*\* Certificate of GEOCHEM \*\*\*\*

Company: DURHAM GEOLOGICAL  
Project:  
Attention: BRUCE BARNES

File: 62-505/P1  
Date: NOV 1/86  
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-FIRE PPB
1838	10	8
1839	19	11
1840	14	6
1841	2	3
1842	2	2
1843	7	4
1844	16	3
1845	15	2
1846	17	3
1847	29	5
1848	21	6
1849	4	1
1850	5	3
1851	10	4
1852	17	3
1853	6	10
1854	7	6
1855	3	3
1856	4	4
1857	10	3
1858	4	2
1859	36	5
1860	3	3
1861	1	4
1862	19	5
1863	16	5
1864	19	5
1865	36	7
1866	9	2
1867	1	3

Certified by *J. L. ...*  
MIN-EN LABORATORIES LTD.

## \*\*\*\* Certificate of GEOCHEM \*\*\*\*

Company: DURHAM GEOLOGICAL SERVICES  
 Project:  
 Attention: B. BARNES

File: 62-509  
 Date: NOV 3/86  
 Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-FIRE PPB
1692	48	3
1693	56	2
1694	88	5
1695	54	6
1696	110	2
1697	111	7
1698	135	4
1699	12	4
1700	85	3
1824	54	8
1825	60	10
1826	44	6
1827	26	25
1828	22	12
1829	25	4
1830	38	7
1831	26	6
1832	11	6
1833	10	3
1834	8	4
1835	9	6
1836	21	2
1837	20	11
1936	12	4

Certified by

*J. Laiti*

MIN-EN LABORATORIES LTD.



MIN-EN LABORATORIES LTD

Specialists in Mineral Environments

705 West 15th Street North Vancouver, B.C. Canada V7M 1T2

*Unusual File*

PHONE: (604) 980-5814 OR (604) 988-4524

TELEX: VIA USA 7601067 UC

Certificate of GEOCHEM

Company: DURHAM GEOLOGICAL  
Project:  
Attention: B. DURHAM/B. BARNES

File: 62-558  
Date: NOV 20/86  
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AS PPM	AU-FIRE PPB
1788	13	5
1790	26	6
1791	24	7
1792	9	3
1793	3	5
1794	16	12
1795	56	3
1796	16	3
1797	34	2
1798	10	7
1799	31	50
1972	18	5
1973	4	3
1974	2	5

Certified by

MIN-EN LABORATORIES LTD.



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

*Unigold*

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 1758

DATE: October 24, 1986

SAMPLE(S) OF: Rock (13)

RECEIVED: October 1986

SAMPLE(S) FROM: Mr. Bruce Barnes, Durham Geological Services Inc.

<u>Sample No.</u>	<u>Gold ppb</u>
1654	19
5	11
6	14
7	8
8	7
9	4
1660	10
1	7
2	33
3	7
4	3
5	6
6	10

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

*Unigold Merit*

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 1584

DATE: October 6, 1986

SAMPLE(S) OF: Rock (13)

RECEIVED: October 1986

SAMPLE(S) FROM: Mr. Bruce Durham, Durham Geological Services Inc.

<u>Sample No.</u>	<u>Gold ppb</u>
A 1601	6
2	4
3	14
4	23
5	6
6	4
7	6
8	6
9	4
A 1610	14
1	11
2	7
3	12

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

*Unreported*

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 1595

DATE:

October 7, 1986

SAMPLE(S) OF: Rock (17)

RECEIVED:

October 1986

SAMPLE(S) FROM: Mr. Bruce Durham, Durham Geological Services Inc.

<u>Sample No.</u>	<u>Gold ppb</u>
1614	8
1616	15
7	8
8	8
9	11
1620	7
1801	10
1803	11
4	10
1806	7
7	10
8	6
1901	7
2	304**
3	7
4	6
5	8

\*\* Checked

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



# BELL-WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 1629

DATE: October 9, 1986

SAMPLE(S) OF: Rock (43)

RECEIVED: October 1986

SAMPLE(S) FROM: Mr. Bruce Barnes, Durham Geological Services Inc.

<u>Sample No.</u>	<u>Gold ppb</u>	<u>Sample No.</u>	<u>Gold ppb</u>
1615	15	1812	8
1621	7	3	8
2	12	4	12
3	12	5	11
4	8	6	15
5	12	7	10
6	12	8	8
7	7	9	11
8	19	1820	7
9	6	1906	8
1630	6	7	14
1	6	8	6
2	7	9	4
3	6	1910	6
4	45	1	14
5	6	2	6
6	21	3	4
1802	11	4	8
1805	10	5	10
1809	10	6	7
1810	8	7	25
1	11		

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 



*Unreported*  
**BELL - WHITE ANALYTICAL LABORATORIES LTD.**

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 1690

DATE: October 16, 1986

SAMPLE(S) OF: Rock (34)

RECEIVED: October 1986

SAMPLE(S) FROM: Durham Geological Services Inc.

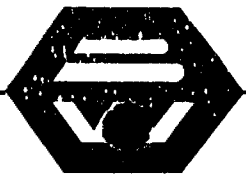
<u>Sample no.</u>	<u>Gold ppb</u>
1637	102**
1644	19
1645	10
6	11
7	19
8	6
9	19
1650	15
1	15
2	11
3	15
1821	25
2	10
3	7
1924	6
5	10
6	7
7	8
8	6
9	16
1930	110**
1	26
2	33
3	48
4	59
5	10
1940	21
1	6
2	18
3	18
4	33
1950	47
1	63
2	11

\*\* Checked

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

**BELL-WHITE ANALYTICAL LABORATORIES LTD.**

Per 



# BELL - WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187,

HAILEYBURY, ONTARIO

TEL: 672-3107

## Certificate of Analysis

NO. 1667

DATE: October 15, 1986

SAMPLE(S) OF: Rock (1)

RECEIVED: October 1986

SAMPLE(S) FROM: Mr. Bruce Durham, Durham Geological Services Inc.

<u>Sample No.</u>	<u>Zn ppm</u>	<u>Ag ppm</u>
1615	240	2.2

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER 

March 20, 1987

Your File: 378/86  
Our File: 2.9744

Mining Recorder  
Ministry of Northern Development and Mines  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

RE: Notice of Intent dated February 20, 1987  
Geophysical (Magnetometer) and Geological Surveys  
on Mining Claims P 756442, et al, in Keith, Muskego,  
Penhorwood & Reeves Townships

---

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,

J.C. Smith, A/Manager  
Mining Lands Section  
Mineral Development and Lands Branch  
Mines and Minerals Division

Whitney Block, Room 6610  
Queen's Park  
Toronto, Ontario  
M7A 1W3

Telephone: (416) 965-4888

DK/mc

cc: Unigold Resources Ltd  
Suite 500  
67 Richmond Street West  
Toronto, Ontario  
M5H 1Z5

Bruce Barnes  
Box 322  
Plesherton, Ontario  
NOC 1E0

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

Resident Geologist  
Timmins, Ontario

Encl.





Recorded Holder  
**UNIGOLD RESOURCES LTD**

Township or Area  
**KEITH, MUSKEGO, PENHORWOOD & REEVES**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<b>Geophysical</b> Electromagnetic _____ days Magnetometer <u>30</u> days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological <u>15</u> days Geochemical _____ 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•756442 to 44 inclusive • 756555 to 59 inclusive • 825766 to 71 inclusive • 832311 to 20 inclusive • 848214 to 23 inclusive • 849523 to 32 inclusive • 849701 to 10 inclusive • 876320 • 879189 to 98 inclusive † 880518 • 880520 to 27 inclusive • 880850 to 53 inclusive • 899984 to 86 inclusive • 901684 to 93 inclusive • 915467 to 70 inclusive • 923441 to 43 inclusive

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

P 890519

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



P-756444  
P-756442  
P-756443  
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P-825771  
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P-899985  
P-899986  
P-901684  
P-901685  
P-901686  
P-901687  
P-901688  
P-901689  
P-901690  
P-901691  
P-901692  
P-901693  
P-915467  
P-915468  
P-915469  
P-915470  
P-923441  
P-923442  
P-923443



AMENDED

Date June 9, 1987	Mining Recorder's Report of Work No. 81/87
----------------------	---

Recorded Holder <b>UNIGOLD RESOURCES LTD</b>
Township or Area <b>KEITH, MUSKEGO, PENHORWOOD AND REEVES TOWNSHIPS</b>

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	P 756442 to 44 inclusive
Electromagnetic _____ days	756555 to 57 inclusive
Magnetometer _____ days	825766 to 71 inclusive
Radiometric _____ days	832312 to 16 inclusive
Induced polarization <b>16</b> _____ days	832320
Other _____ days	848214 to 23 inclusive
Section 77 (19) See "Mining Claims Assessed" column	849523 to 32 inclusive
Geological _____ days	849701
Geochemical _____ days	849704 to 07 inclusive
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	849710
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	876320
<input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims.	879189 to 98 inclusive
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	880518
	880521 to 24 inclusive
	880850 to 53 inclusive
	901684 to 93 inclusive
	915467 - 68
	923441 to 43 inclusive

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

No credits have been allowed for the following mining claims

<input checked="" type="checkbox"/> not sufficiently covered by the survey	<input type="checkbox"/> insufficient technical data filed
P 756558 - 59 832311 832317 to 19 inclusive 849702 - 03 849708 - 09 880519 - 20 880525 to 27 inclusive 899984 to 86 inclusive 915469 - 70	

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Recorded Holder  
**UNIGOLD RESOURCES LTD**

Township or Area  
**KEITH, MUSKEGO, PENHORWOOD AND REEVES TOWNSHIPS**

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 <b>Geological</b> _____ days <b>Geochemical</b> _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input type="checkbox"/> Ground <input 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.	<b>\$2,779.50 SPENT ON ANALYSES OF SAMPLES TAKEN FROM MINING CLAIMS:</b>  P 756444 756556 832311 to 15 inclusive 832318 832320 848216 to 18 inclusive 848220 to 23 inclusive 849524 to 27 inclusive 849528 to 30 inclusive 849703 849706 - 07 876320 879190 to 92 inclusive 879197 - 98 899985 915467 - 68 923442 - 43  <b>185.2 ASSESSMENT WORK DAYS ARE ALLOWED WHICH MAY BE GROUPED IN ACCORDANCE WITH SECTION 76(6) OF THE MINING ACT.</b>

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

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.

July 2, 1987

Your File Nos. 81/87, 82/87  
Our File: 2.9744

Mining Recorder  
Ministry of Northern Development and Mines  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

RE: Notice of Intent dated June 9, 1987  
Geophysical (Induced Polarization) Survey and  
Data for Assaying on Mining Claims P 756442,  
et al, in Keith, Muskego, Penhorwood and Reeves  
Townships

---

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,

Gary L. Weatherson, Manager  
Mining Lands Section  
Mineral Development and Lands Branch  
Mines and Minerals Division

Whitney Block, Room 6610  
Queen's Park  
Toronto, Ontario  
M7A 1W3

Telephone: (416) 965-4888

DK/mc

cc: Unigold Resources Ltd  
Suite 500  
67 Richmond Street West  
Toronto, Ontario  
M5H 1Z5

Bruce Durham  
Box 734  
Timmins, Ontario  
P4N 7G2

Resident Geologist  
Timmins, Ontario

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

Encl.



GEOPHYSICAL TECHNICAL DATA

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

Number of Stations \_\_\_\_\_ Number of Readings \_\_\_\_\_  
Station interval \_\_\_\_\_ Line spacing \_\_\_\_\_  
Profile scale \_\_\_\_\_  
Contour interval \_\_\_\_\_

MAGNETIC

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

ELECTROMAGNETIC

Instrument \_\_\_\_\_  
Coil configuration \_\_\_\_\_  
Coil separation \_\_\_\_\_  
Accuracy \_\_\_\_\_  
Method:  Fixed transmitter  Shoot back  In line  Parallel line  
Frequency \_\_\_\_\_  
(specify V.L.F. station)  
Parameters measured \_\_\_\_\_

GRAVITY

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

INDUCED POLARIZATION  
RESISTIVITY

Instrument Scintrex IPR-11 Receiver, Phoenix IPT-1 transmitter  
Method  Time Domain  Frequency Domain  
Parameters - On time 2 sec Frequency time delay 2 sec pulse  
- Off time 2 sec Range \_\_\_\_\_  
- Delay time 360ms  
- Integration time 780ms  
Power 1 kW  
Electrode array Dipole - Dipole  
Electrode spacing 25m  
Type of electrode stainless steel rods / porous pots



**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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Total Number of Samples \_\_\_\_\_

Type of Sample \_\_\_\_\_  
(Nature of Material)

Average Sample Weight \_\_\_\_\_

Method of Collection \_\_\_\_\_  
\_\_\_\_\_

Soil Horizon Sampled \_\_\_\_\_

Horizon Development \_\_\_\_\_

Sample Depth \_\_\_\_\_

Terrain \_\_\_\_\_  
\_\_\_\_\_

Drainage Development \_\_\_\_\_

Estimated Range of Overburden Thickness \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SAMPLE PREPARATION**

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

General \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

**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 (\_\_\_\_\_ tests)

Name of Laboratory \_\_\_\_\_

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

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

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

General \_\_\_\_\_  
\_\_\_\_\_  
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P-756444  
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P-923443

MELROSE TP. M.861

THE TOWNSHIP OF

REEVES

DISTRICT OF SUDBURY

PORCUPINE MINING DIVISION

SCALE: 1 INCH = 40 CHAINS

LEGEND

- PATENTED LAND ● or ⊕
- CROWN LAND SALE CS.
- LEASES ⊙
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION LO
- MINING RIGHTS ONLY MRO
- SURFACE RIGHTS ONLY SRO
- ROADS —
- IMPROVED ROADS —
- KING'S HIGHWAYS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- MINES X
- CANCELLED C
- PATENTED S.R.O. ⊕

NOTES

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

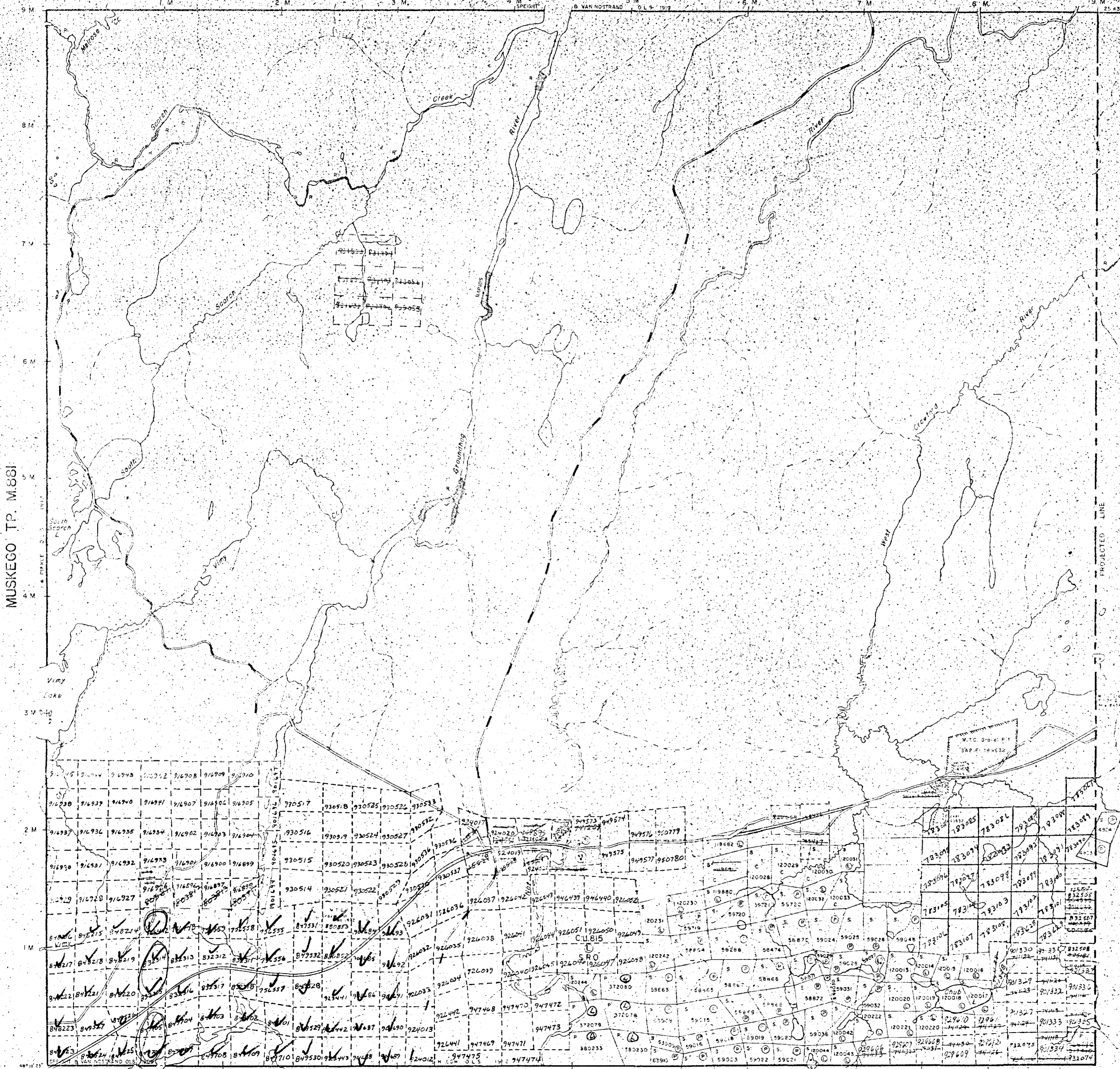
Areas withdrawn from staking under Section 43 of the Mining Act (R.S.O. 1970)

Order No.	File	Date	Disposition
63302		1972	EX 344

S.R.O. withdrawn from staking under Sec. 34(1) of the Mining Act (R.S.O. 1970) File 63302.

MUSKEGO TP. M.881

SEWELL TP. M.102



RECEIVED DEC 09

Rec. Feb 11/80

PLAN NO. M.1074

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

PENHORWOOD TP. M.1055



**REFERENCE**

**AREAS WITHDRAWN FROM DISPOSITION**

M.R.O. - MINING RIGHTS ONLY				
S.R.O. - SURFACE RIGHTS ONLY				
M.+S. - MINING AND SURFACE RIGHTS				
Description	Order No.	Date	Disposition	File
400' RESERVE			S.R.O.	135537
SEC 43/70	W 91/72	27/12/72	S.R.O.	163006 V.2
SEC 36/80		11/7/81	S.R.O.	135537

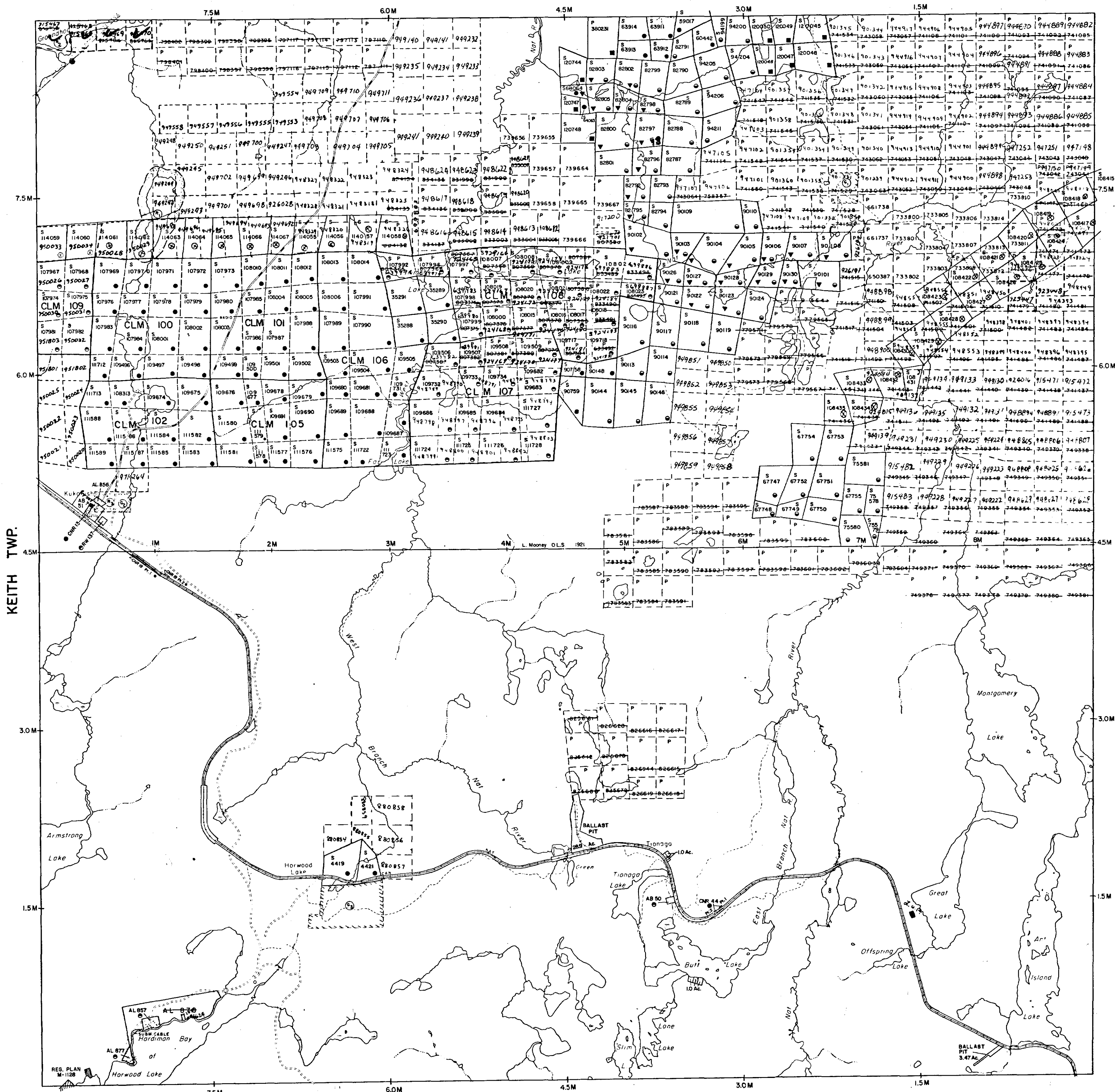
**SAND AND GRAVEL**

GRAVEL	FILE 38729
GRAVEL PIT	FILE 13555 V.6
GRAVEL	FILE 106274

**NOTES**

FLOODING RIGHTS ON HORWOOD LAKE RESERVED TO ONTARIO HYDRO TO CONTOUR ELEVATION 117' L.O. 7746

**REEVES TWP.**



**LEGEND**

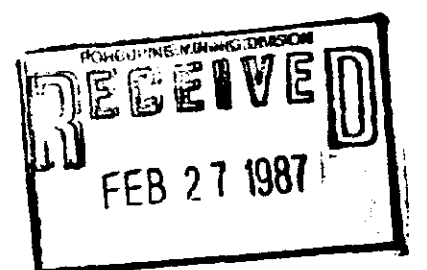
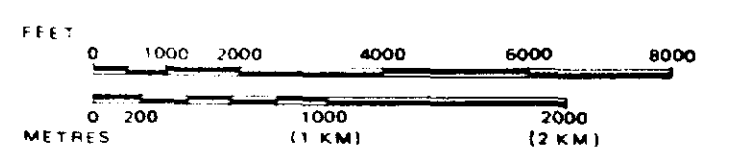
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

**DISPOSITION OF CROWN LANDS**

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	◐
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	◼
" MINING RIGHTS ONLY	◻
LICENCE OF OCCUPATION	▽
ORDER-IN-COUNCIL	OC
RESERVATION	⊙
CANCELLED	⊖
SAND & GRAVEL	⊗

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT R.S.O. 1970 CHAP. 380, SEC. 63, SUBSEC. 1.

SCALE 1 INCH = 40 CHAINS



TOWNSHIP  
**PENHORWOOD**  
M.N.R. ADMINISTRATIVE DISTRICT  
CHAPLEAU  
MINING DIVISION  
PORCUPINE  
LAND TITLES / REGISTRY DIVISION  
SUDBURY

Ministry of Natural Resources  
Land Management Branch

Date MARCH 1985

checked June 14/85  
L.P. L.D.

Number

**G-3244**



**REFERENCE**

**AREAS WITHDRAWN FROM DISPOSITION**

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.+S. - MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
			S.R.O.	155261
			S.R.O.	22417
			S.R.O.	188543

**SAND AND GRAVEL**

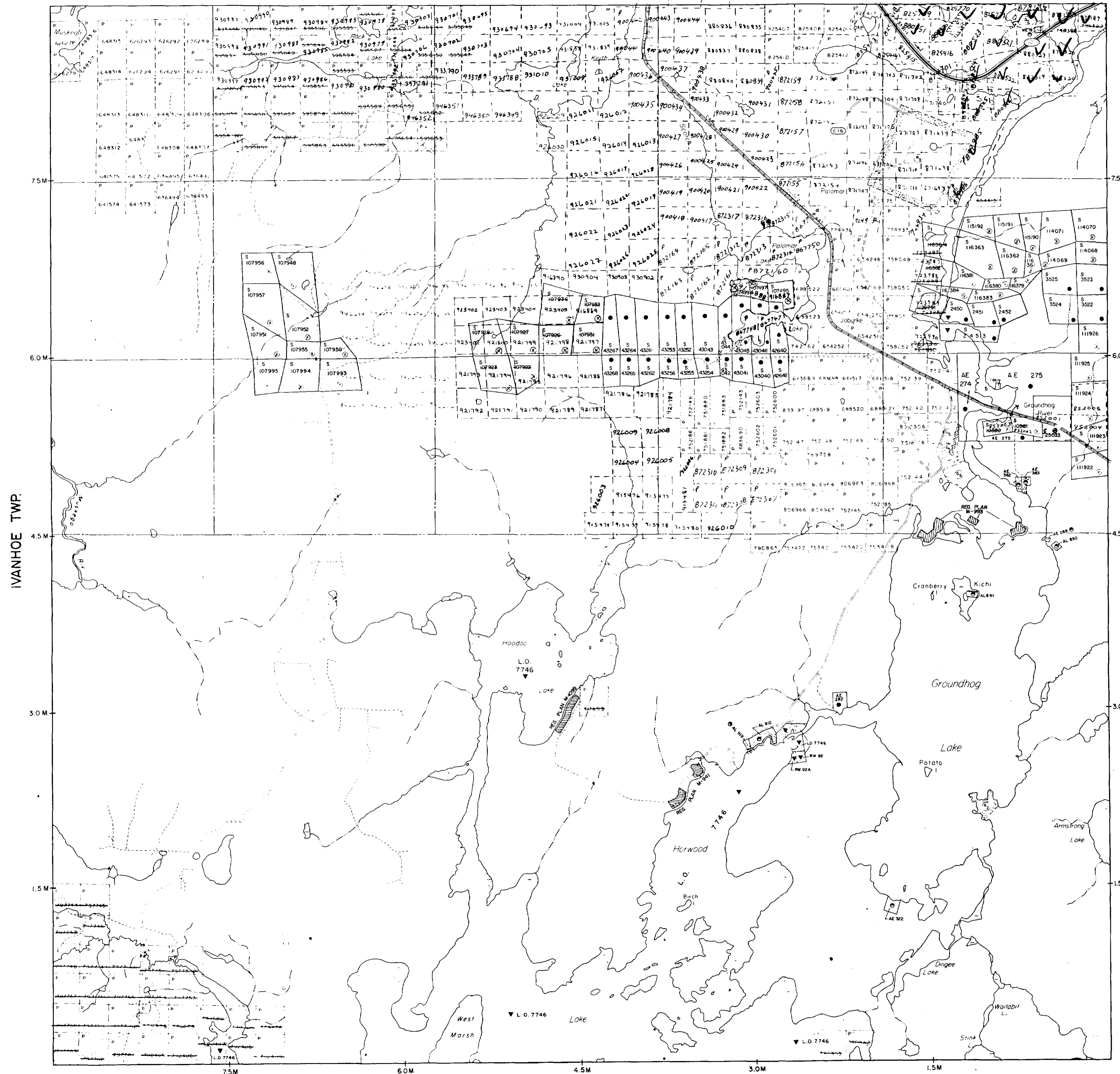

**NOTES**

SURVEY LINES SHOWN THUS ARE FOR CONTROL ONLY. CLAIMS CLASSIFIED AS BEING IN UNSUBDIVIDED TERRITORY. — March 7, 1947.  
Surveyor General

**FLOODING**

Flooded areas on Hoodoo B, Horwood Lakes and Groundhog R. to contour elev 1117 L.O. 7746 File: 75166

**MUSKEGO TWP.**



**HORWOOD TWP.**

**LEGEND**

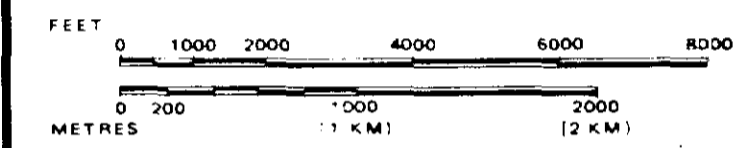
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES: TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES: LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

**DISPOSITION OF CROWN LANDS**

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	○
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	■
" MINING RIGHTS ONLY	■
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	⊙
CANCELLED	⊙
SAND & GRAVEL	⊙

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

SCALE: 1 INCH = 40 CHAINS



REGISTERED  
SEP 03 1985

TOWNSHIP  
**KEITH**  
M.N.R. ADMINISTRATIVE DISTRICT  
CHAPLEAU  
MINING DIVISION  
PORCUPINE  
LAND TITLES / REGISTRY DIVISION  
SUDBURY

Ministry of Natural Resources  
Land Management Branch  
Ontario

Date APRIL 1985

Number

By Cf June 13 1985 **G-3238**



THE TOWNSHIP OF  
OF  
**MUSKEGO**

DISTRICT OF  
SUDBURY

PORCUPINE  
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

**LEGEND**

- PATENTED LAND ● or ⊙
- CROWN LAND SALE C.S.
- LEASES ⊙
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION L.O.
- MINING RIGHTS ONLY M.R.O.
- SURFACE RIGHTS ONLY S.R.O.
- ROADS —
- IMPROVED ROADS —
- KING'S HIGHWAYS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- MINES ⊙
- CANCELLED ⊙
- PATENTED for S.R.O. ⊙

**NOTES**

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

Subdivision of this township into lots and concessions was annulled march 9, 1962.

Areas withdrawn from staking under Section 43 of the Mining Act. (R.S.O. 1970)

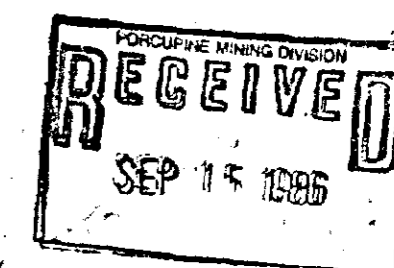
Order No.	File	Date	Disposition
①	0.80/81	163002	AUG 3, 1972 S.R.O.
		4/8/81	S.R.O. Re-op
②		163006	DEC. 27, 1972 S.R.O.
③	W.C. 78	109509	MAY 8, 1978 S.R.O. Re-open

*A.P. Re-opened for prospecting*

*AS PENDING PROCEEDINGS - LANDS NOT OPEN FOR STAKING*

**SAND AND GRAVEL**

④ M.T.C. Gravel Reserve Oct. 10, 1979.



*Rec. Feb 11/80*

PLAN NO. **M-881**

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

FOLEYET TWP. (M-812)

REEVES' TWP. (M-1074)

KEITH TWP. (M-962)



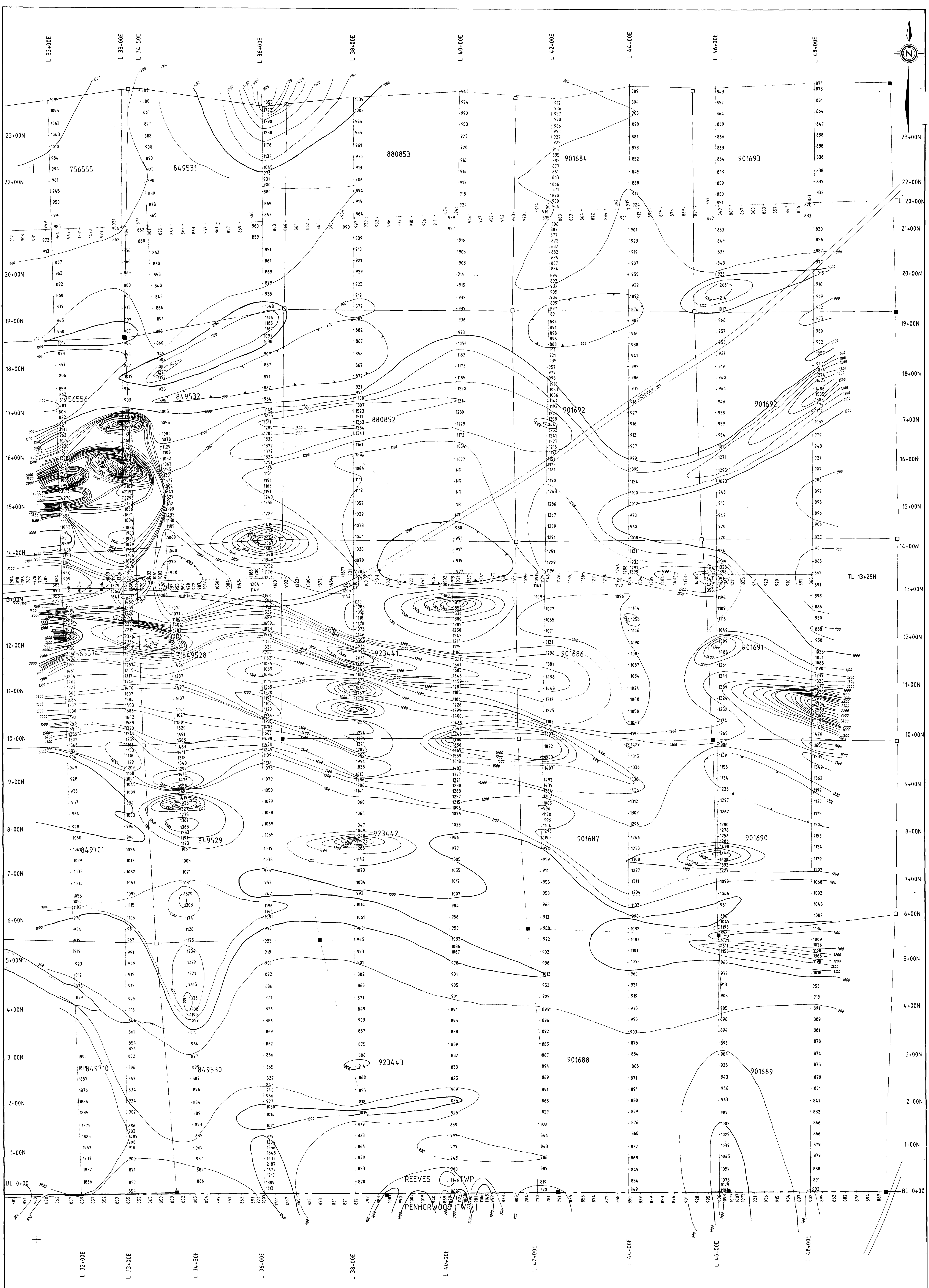






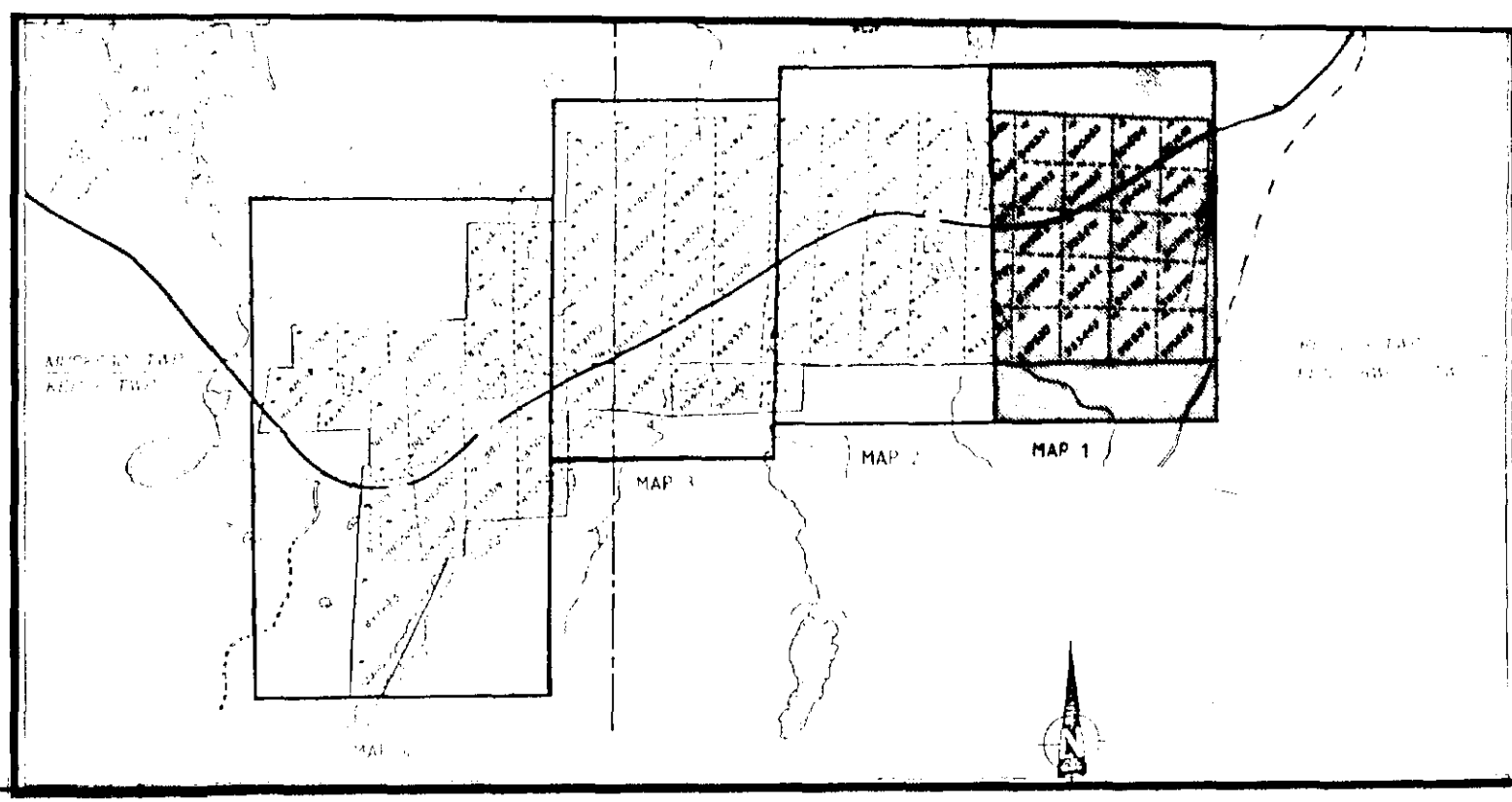






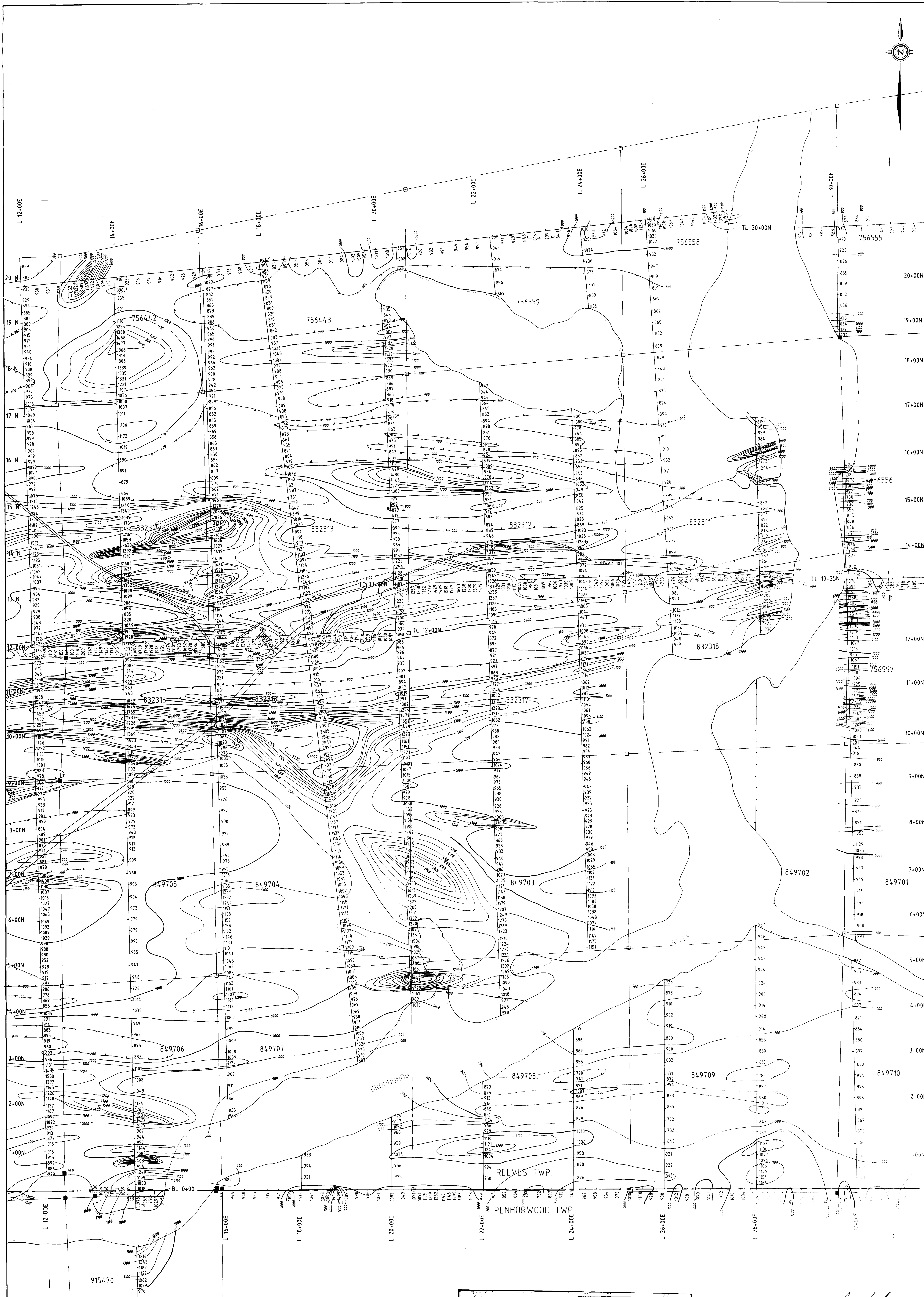
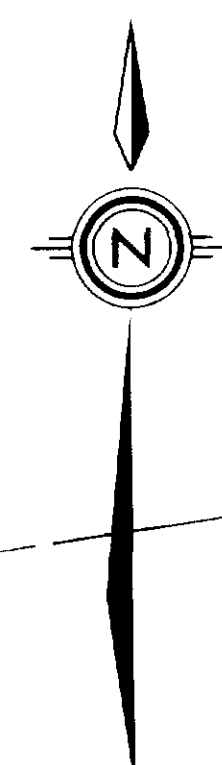
**LEGEND**

INSTRUMENT: PPM 350  
 PROTON PRECISION  
 PARAMETERS MEASURED: Total Magnetic Field  
 Diurnal Corrected by PPM 400 Recording  
 Base Station  
 ACCURACY: +/- 1 nano-Tesla  
 ELEVATION INTERVAL: 100  
 BLOCK NUMBER: 57000

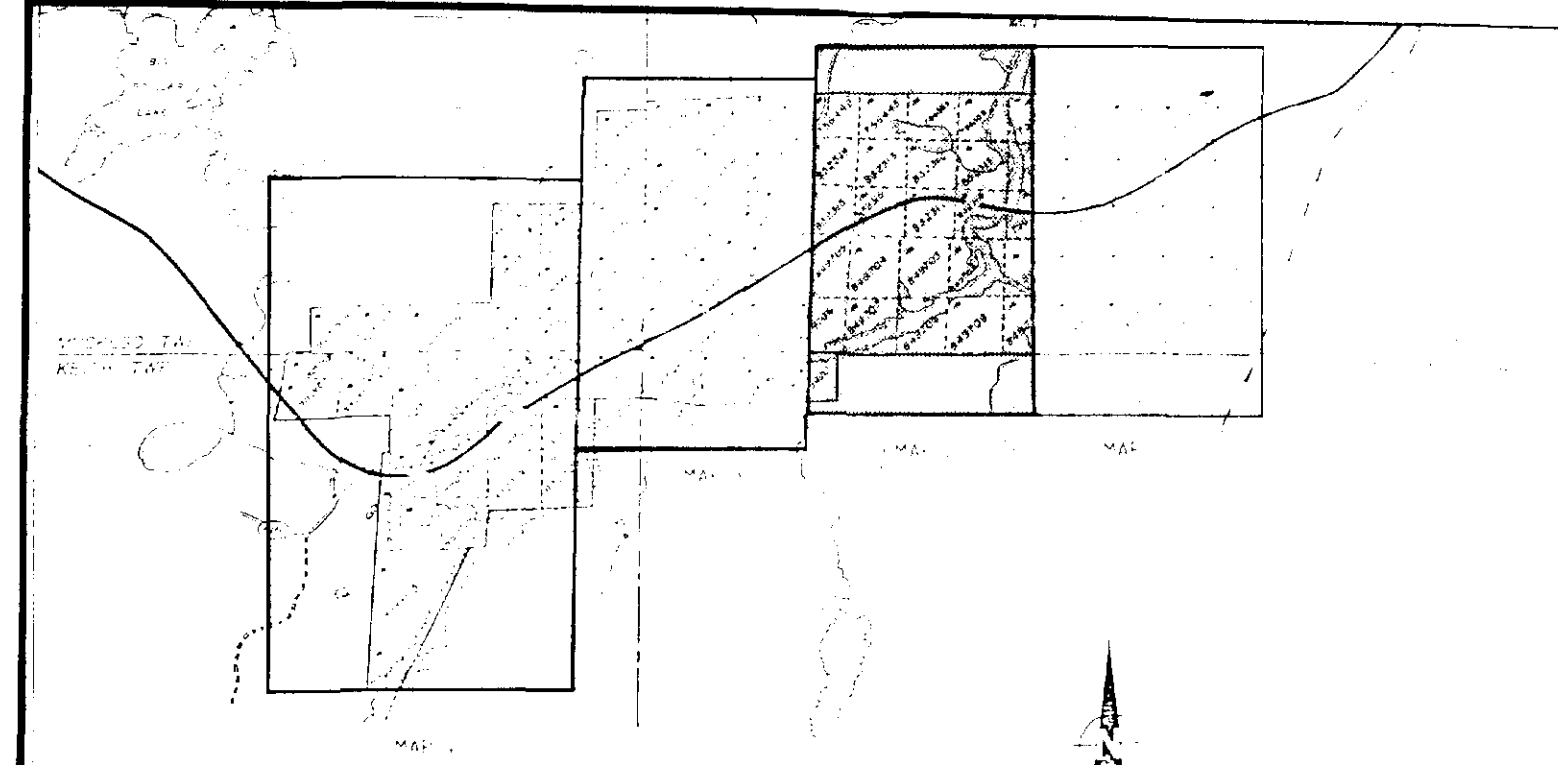


REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.	
	for UNIGOLD RESOURCES LTD.	
	Title MORIN PROPERTY	MAP 1
	MAGNETOMETER SURVEY	
	Date: NOV/1986	Scale: 1:2500
	Drawn: C.G./L.R.	Approved: [Signature]
		N.T.S.: 27744
		File: M-224



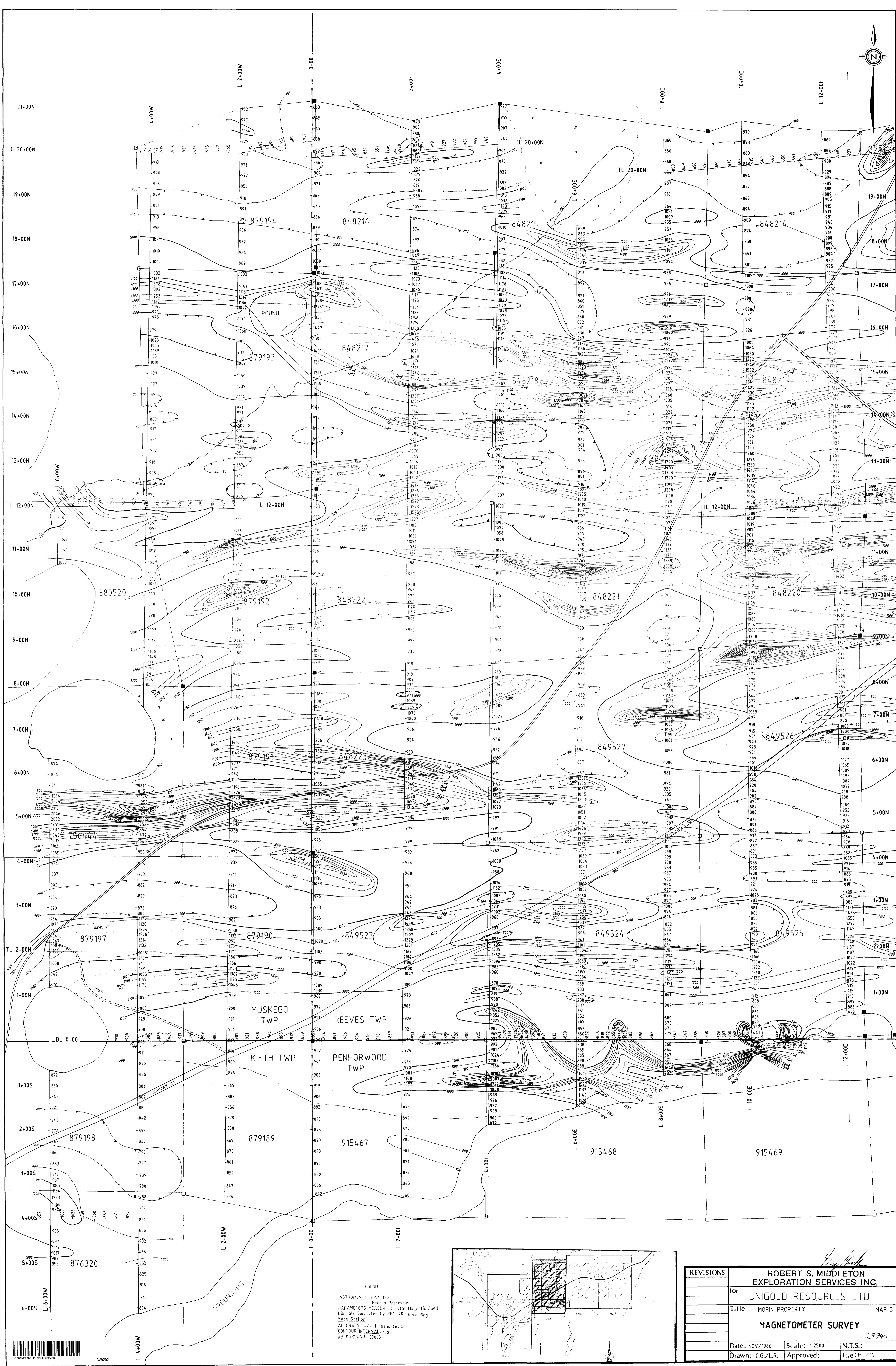
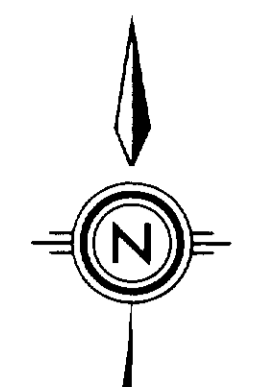


LEGEND  
 INSTRUMENT: PPM 350  
 Proton Precession  
 PARAMETERS MEASURED: Total Magnetic Field  
 Diurnal Corrected by PPM 400 Recording  
 Base Station  
 ACCURACY: +/- 1 nano-Teslas  
 CONTOUR INTERVAL: 100  
 BACKGROUND: 57000

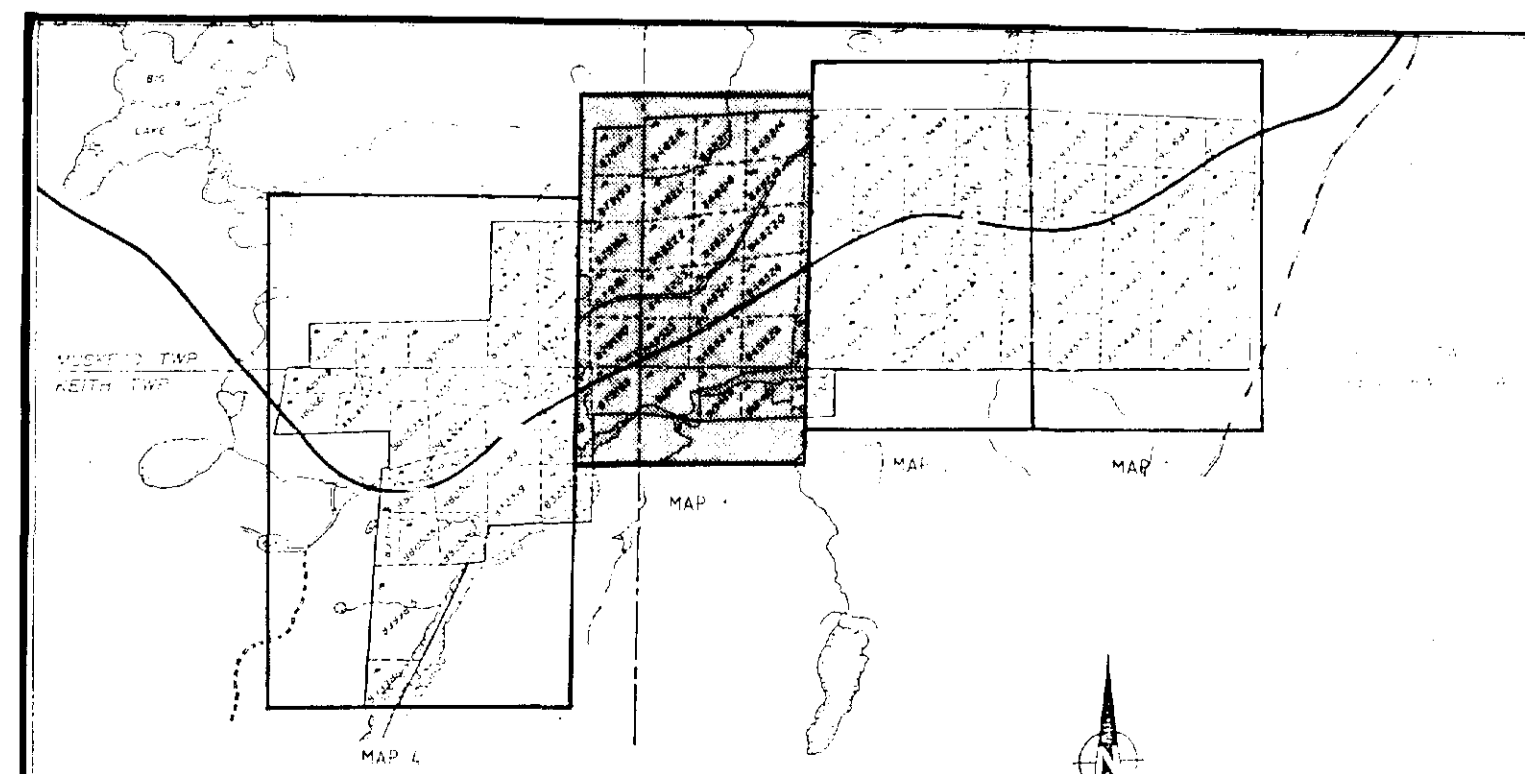


REVISIONS		ROBERT S. MIDDLETON EXPLORATION SERVICES INC.	
		for UNIGOLD RESOURCES LTD.	
		Title MORIN PROPERTY	MAP 2
		MAGNETOMETER SURVEY	
		Date: NOV/1986	Scale: 1:2500
		Drawn: C.G./L.R.	Approved: [Signature]
			N.T.S.: 29744
			File: M-224

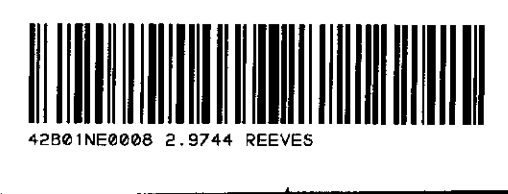


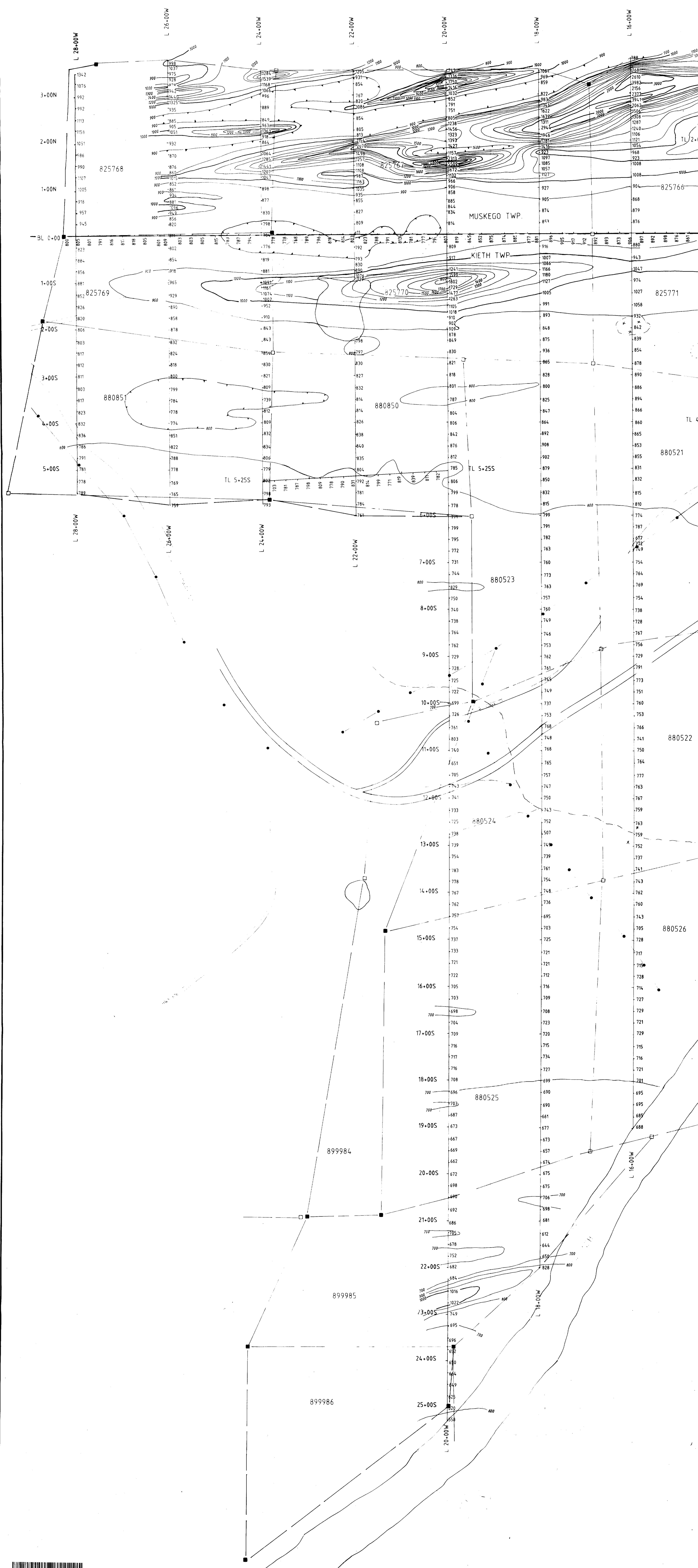


LEIGH  
 INSTRUMENT: PPM 350  
 PARAMETERS: MEASURED; Total Magnetic Field  
 (Diurnal Corrected by PPM 400 Recording  
 Base Station)  
 ACCURACY: +/- 1 nano-Teslas  
 CONTOUR INTERVAL: 100  
 BACKGROUND: 57000



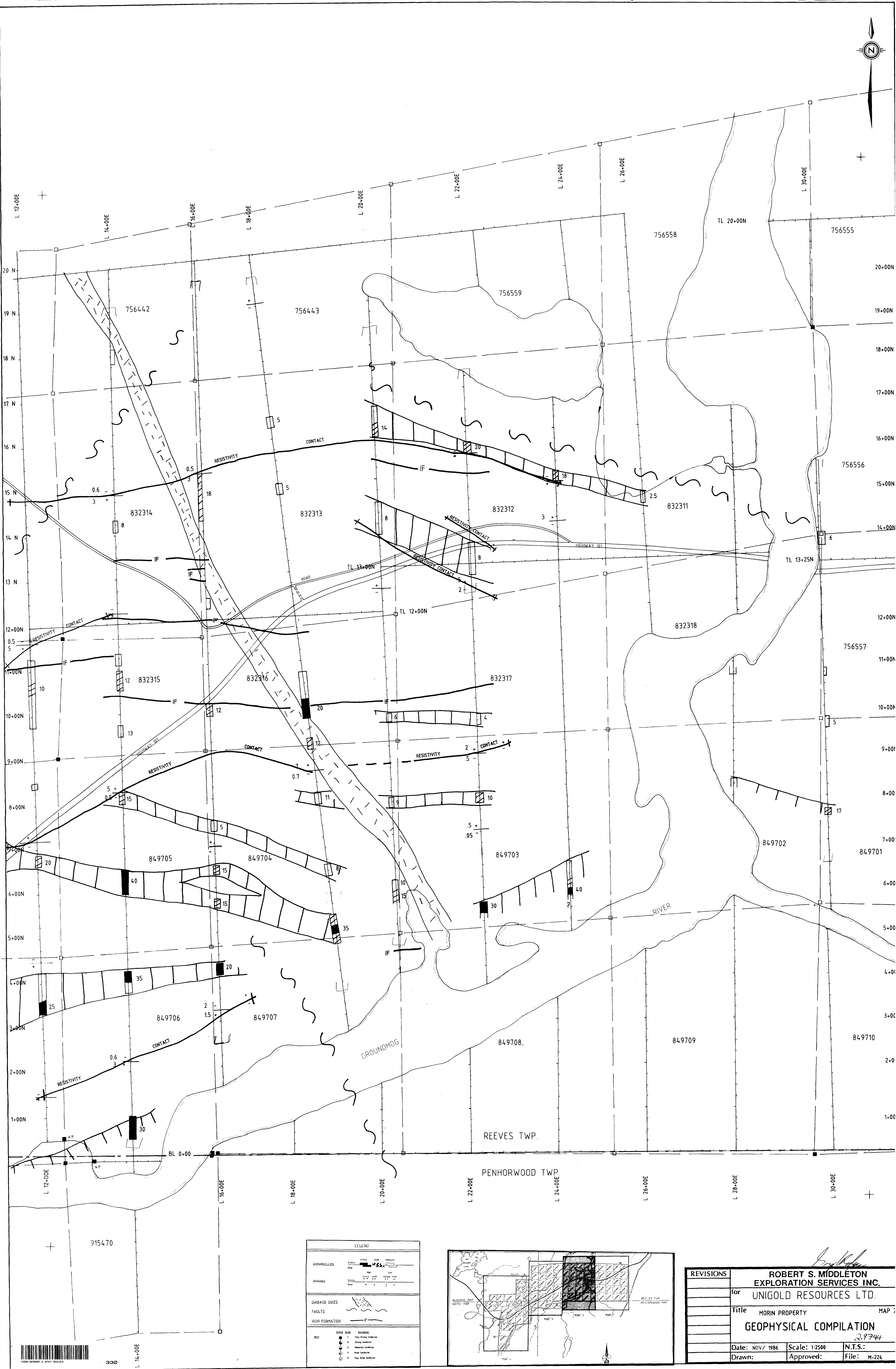
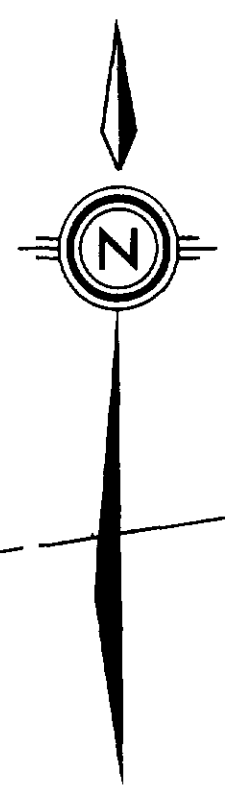
ROBERT S. MIDDLETON EXPLORATION SERVICES INC.			
for UNIGOLD RESOURCES LTD			
Title MORIN PROPERTY		MAP 3	
<b>MAGNETOMETER SURVEY</b>			
Date: NOV/1986	Scale: 1:2500	N.T.S.: 2.9744	
Drawn: C.G./L.R.	Approved:	File: M 224	



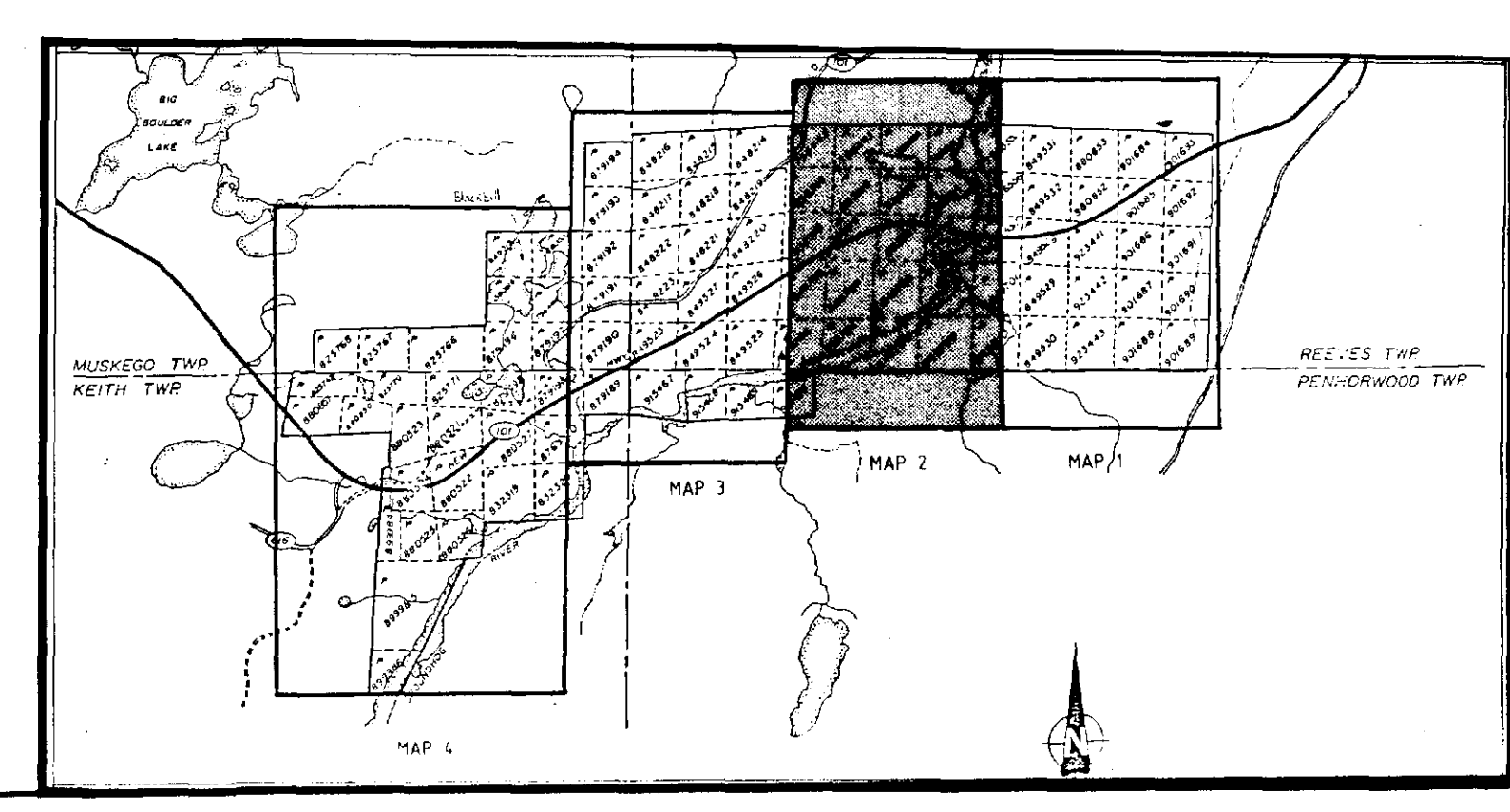






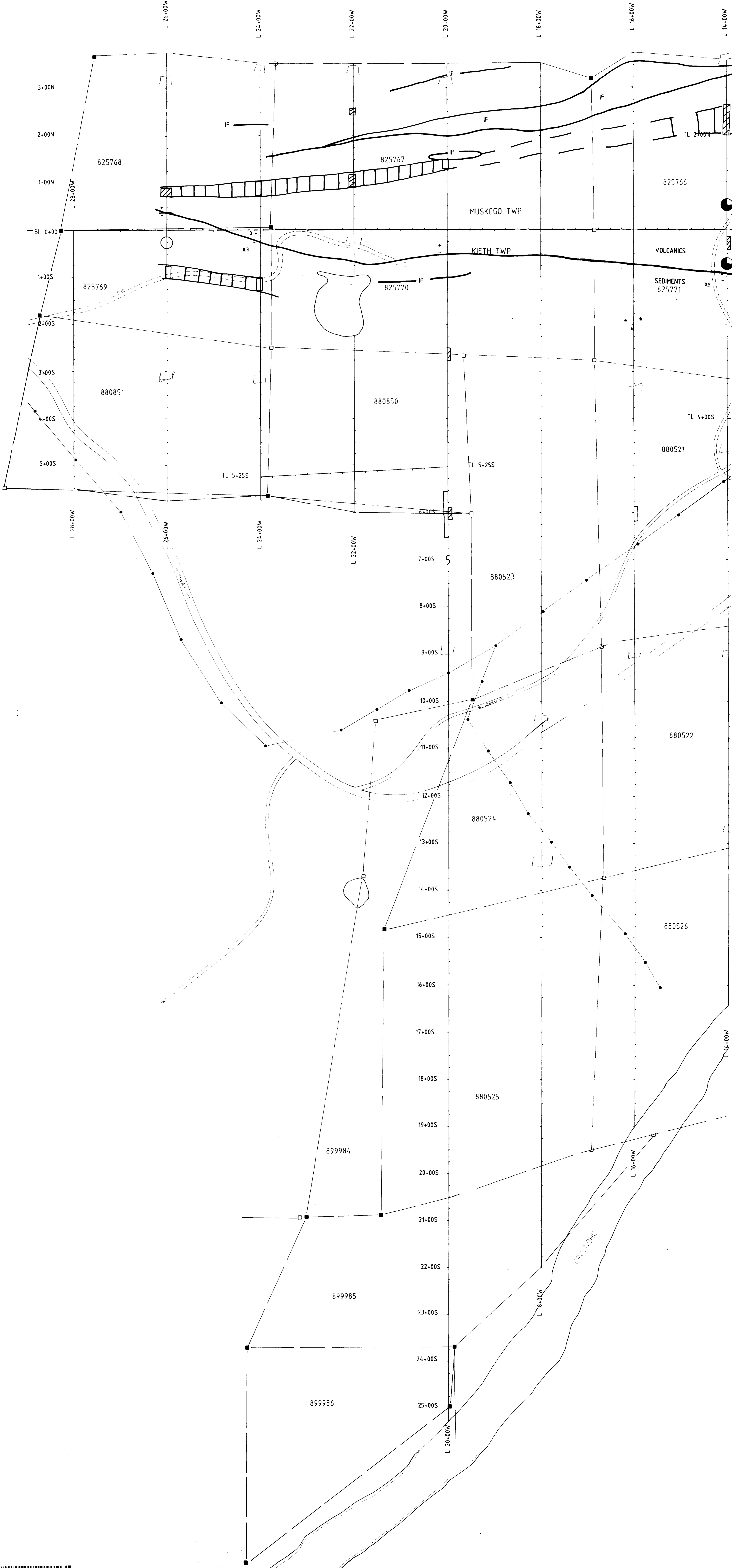


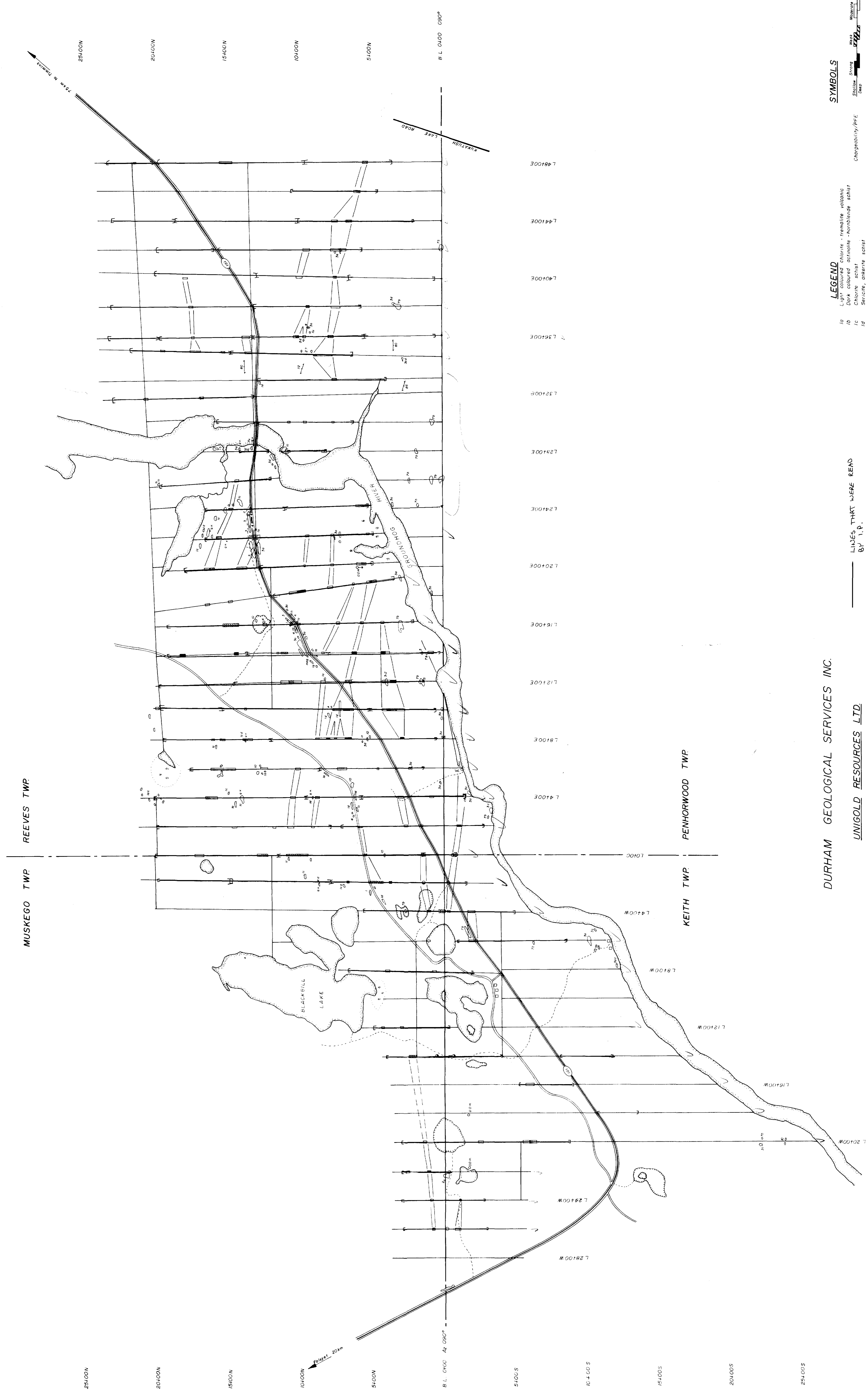
LEGEND	
CONTACT	---
FAULT	- - -
IRON FORMATION	
DIABASE DIKES	▨
W.P.	W.P.
BL	BL
RESISTIVITY	RESISTIVITY
IF	IF
ROAD	ROAD
HIGHWAY 101	HIGHWAY 101
RIVER	RIVER
GROUNDHOG RIVER	GROUNDHOG RIVER
REEVES TWP.	REEVES TWP.
PENHORWOOD TWP	PENHORWOOD TWP
915470	915470
330	330



REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.	
	for	UNIGOLD RESOURCES LTD.
	Title	MORIN PROPERTY MAP 2
		<b>GEOPHYSICAL COMPILATION</b>
		2.9744
Date: NOV/ 1986	Scale: 1:2500	N.T.S.:
Drawn:	Approved:	File: M-224







**SYMBOLS**

Symbol	Description
●	Very strong conductor
○	Strong conductor
○	Moderate conductor
○	Weak conductor
○	Very weak conductor

**LEGEND**

Symbol	Description
1a	Light colored schist, - fine grained, calcic
1b	Dark colored schist, - hornblende, calcic
1c	Chert schist
1d	Sericitic, shaly schist
2b	Felsic Tuff
3a	Greywacke
3b	Conglomerate
3c	Silt
3d	Chert schist, sericitic schist
4	Iron Formation
6	Mafic Dyke
7a	Q.P.
7c	Feldspar Porphyry
10	Diorite

UNIGOLD RESOURCES LTD.  
 MORIN PROPERTY  
 I. P. SURVEY LINE LOCATION

DURHAM GEOLOGICAL SERVICES INC.

Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

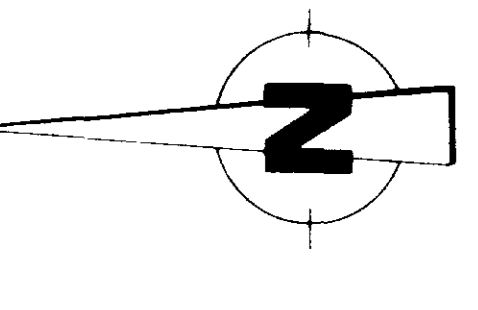
Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

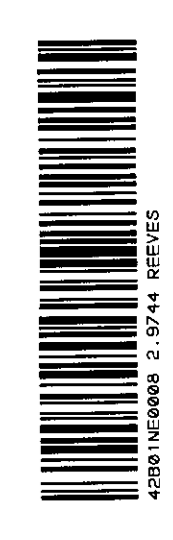
Scale 1:10,000  
 Date March, 1987

Scale 1:10,000  
 Date March, 1987

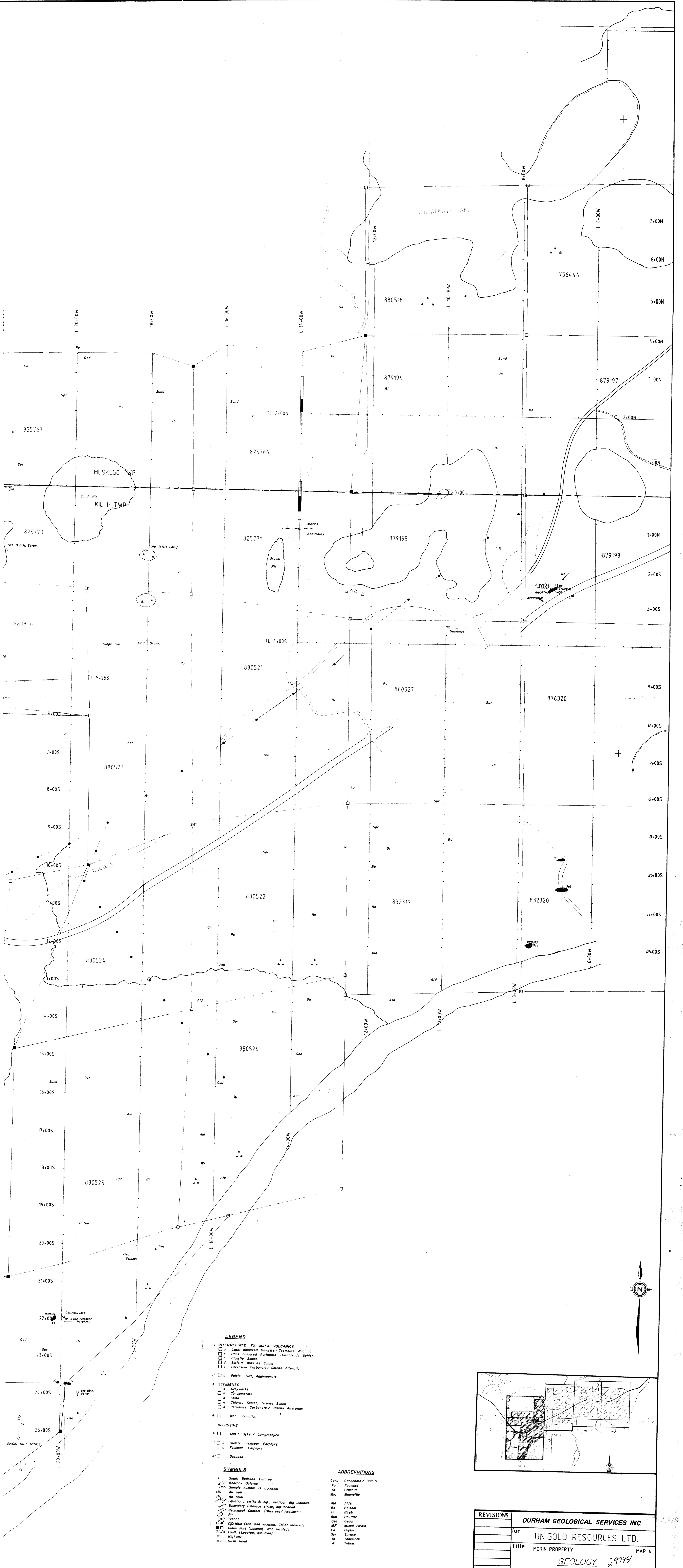
Scale 1:10,000  
 Date March, 1987



2-7744



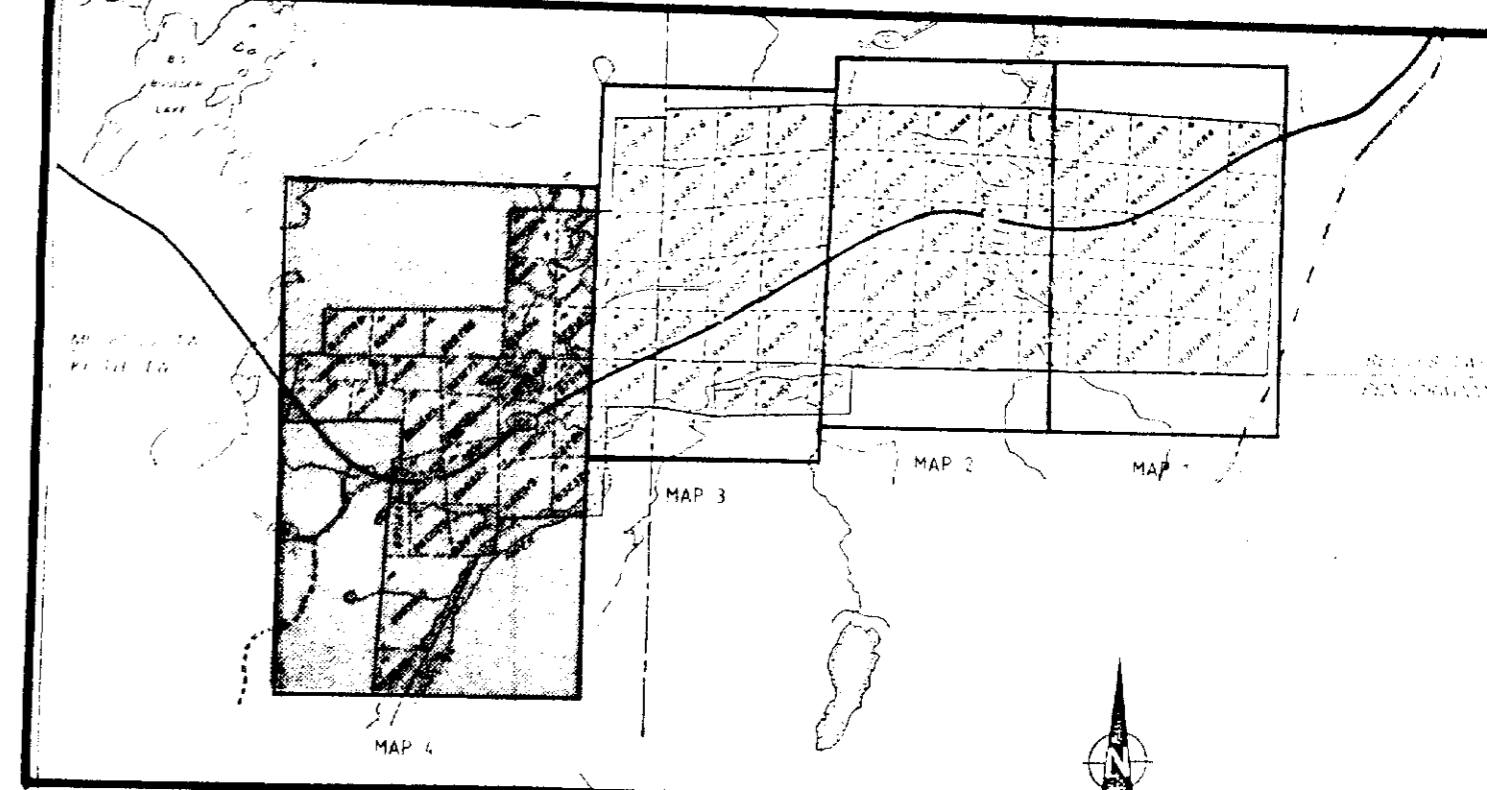
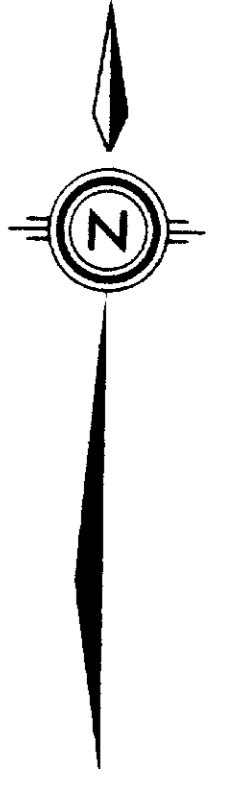
360



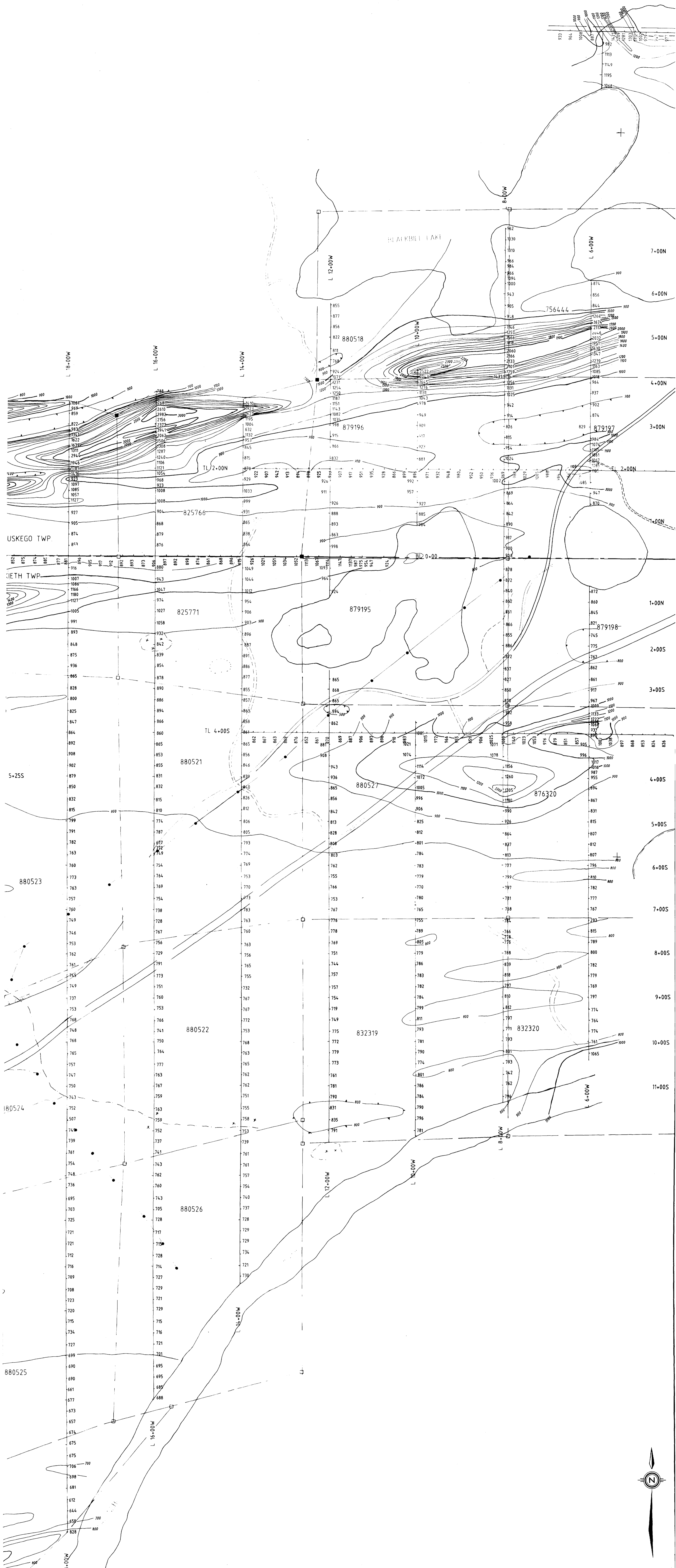
- LEGEND**
- 1 INTERMEDIATE TO MAFIC VOLCANICS**
- a Light coloured Chlorite - Tremolite Volcanic
  - b Dark coloured Actinolite - Hornblende Schist
  - c Chlorite Schist
  - d Sericite Ankerite Schist
  - e Pervasive Carbonate / Calcite Alteration
- 2**
- a Felsic Tuff, Agglomerate
- 3 SEDIMENTS**
- a Gravel
  - b Conglomerate
  - c Sand
  - d Chlorite Schist, Sericite Schist
  - e Pervasive Carbonate / Calcite Alteration
- 4**
- a Iron Formation
- INTRUSIVE**
- a Mafic Dyke / Lamprophyre
  - b Quartz Feldspar Porphyry
  - c Felsic Porphyry
  - d Diabase

- SYMBOLS**
- Small Blackrock Outcrop
  - Blackrock Outcrop
  - Sample number & Location
  - Au ppm
  - Ag ppm
  - Foliation, strike & dip, vertical, dip inclined
  - Secondary Cleavage strike, dip in Mees
  - Geological Contact (Observed / Assumed)
  - Pit
  - Tranch
  - Old Hole (Assumed location, collar located)
  - Claim Post (Located, Not located)
  - Flow (Located, Assumed)
  - Highway
  - Bush Road

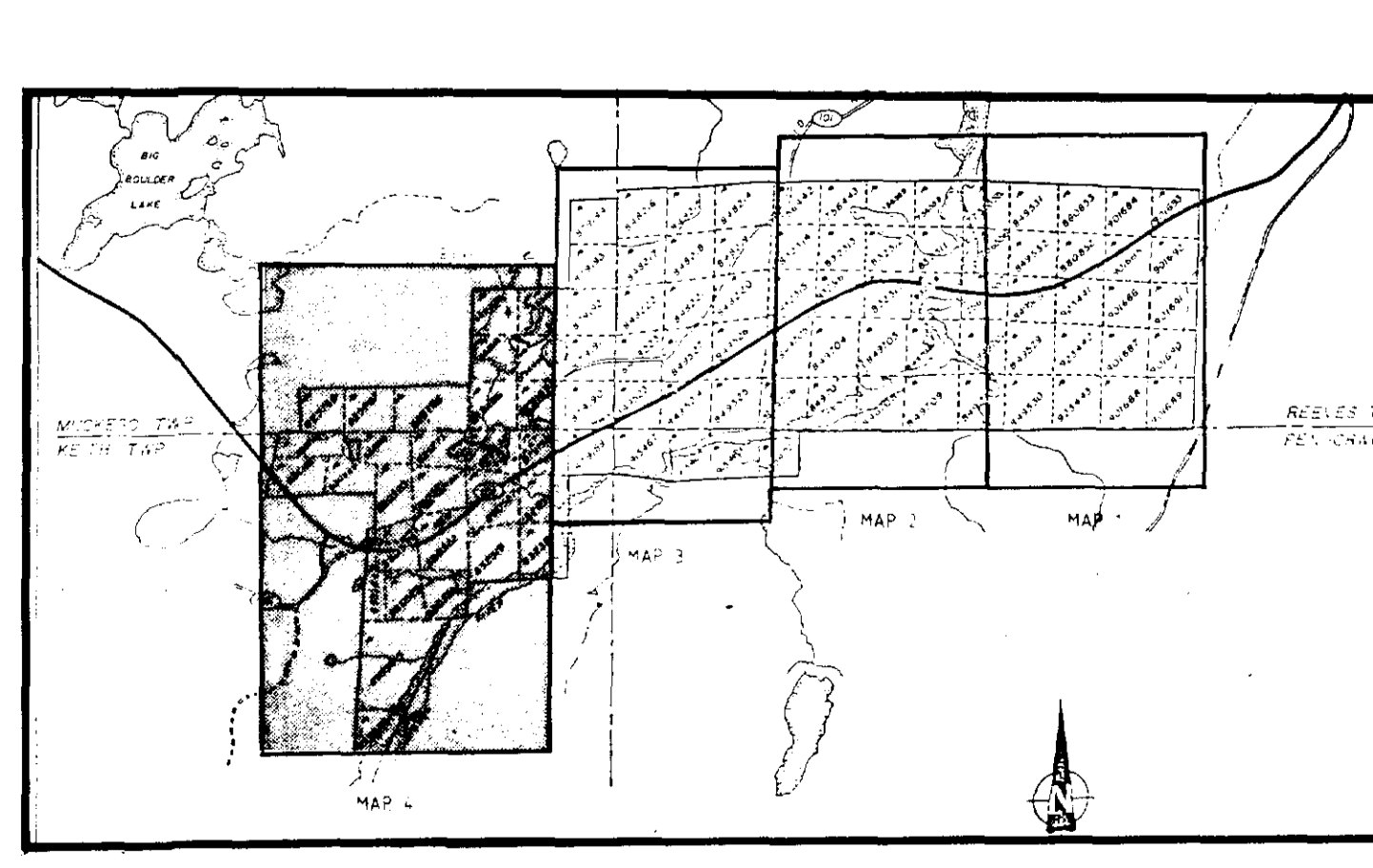
- ABBREVIATIONS**
- Carb Carbonate / Calcite
  - Fu Fuchsite
  - Gr Graptolite
  - Mag Magnetite
  - Ald Alder
  - Bo Balsam
  - Br Birch
  - Bld Boulder
  - Ced Cedar
  - MF Mixed Forest
  - Pn Poplar
  - Spr Spruce
  - Ta Tamarack
  - Wl Willow

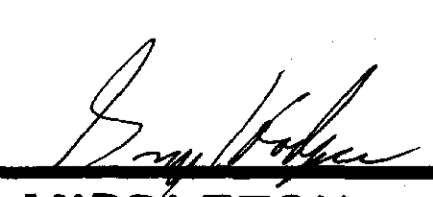


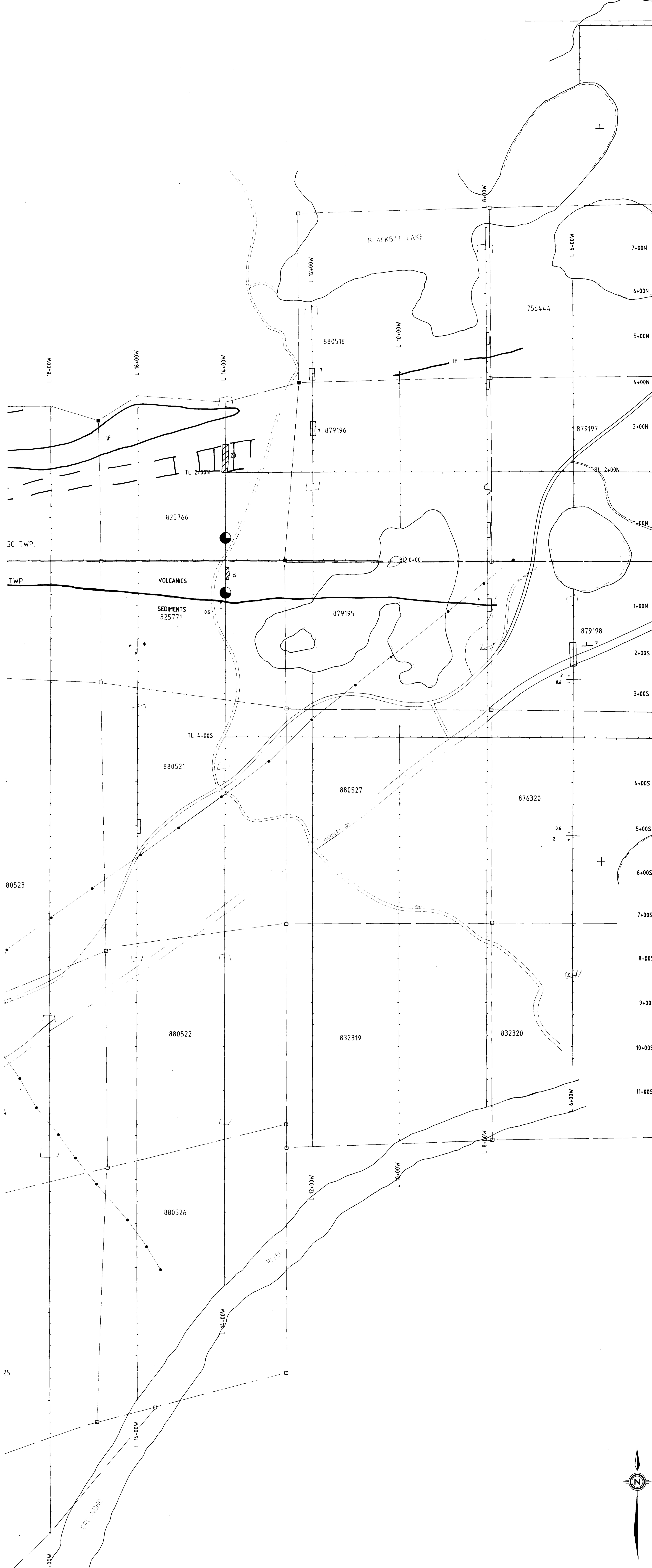
REVISIONS	<b>DURHAM GEOLOGICAL SERVICES INC.</b>	
	for <b>UNIGOLD RESOURCES LTD.</b>	
	Title	MORIN PROPERTY MAP 4
		<b>GEOLOGY 29744</b>
Date	02/11/1997	Scale: 1:25000 N.T.S.



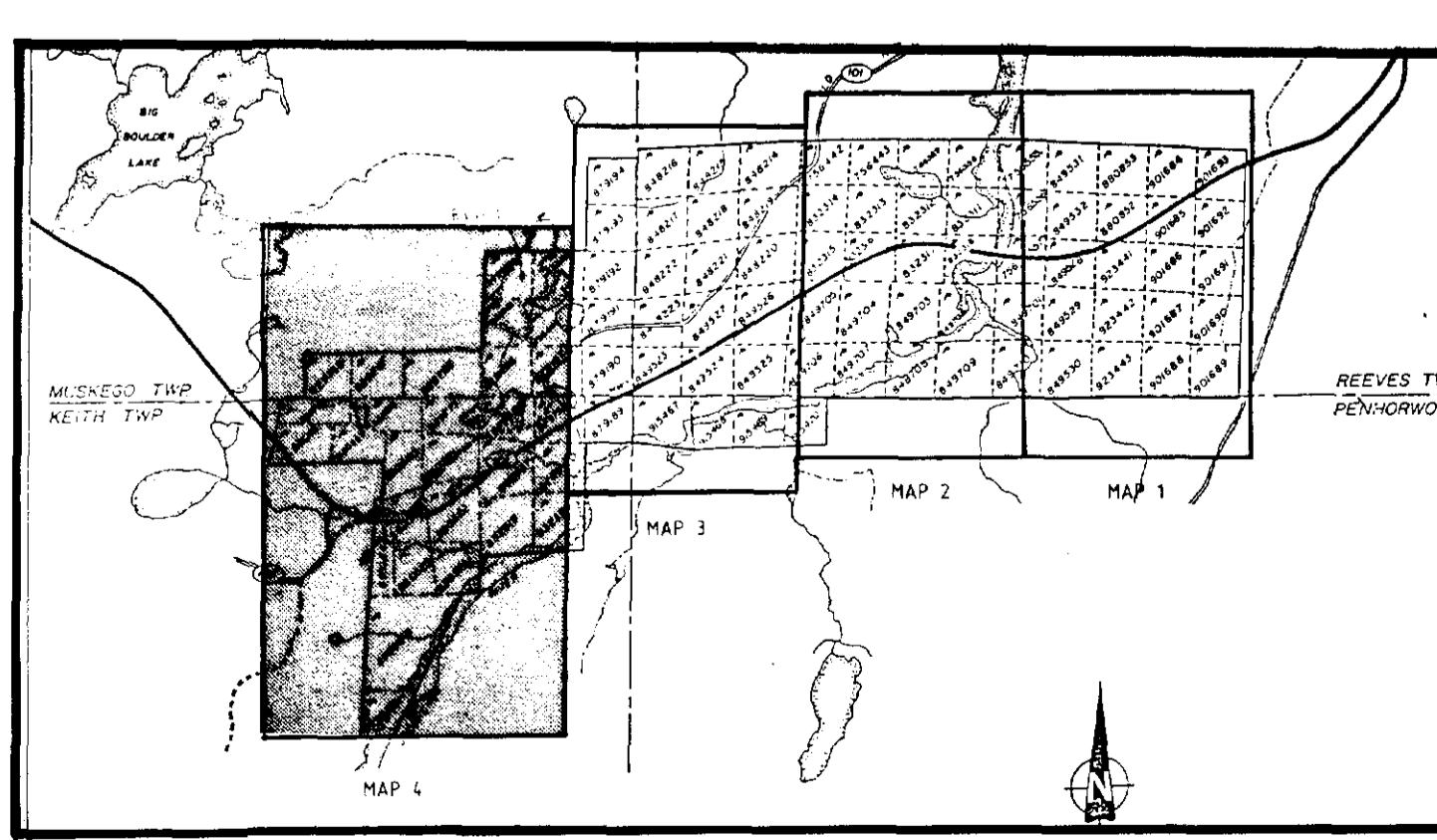
**LEGEND**  
 INSTRUMENT: PPM 350  
 Prolon Precession  
 PARAMETERS MEASURED: Total Magnetic Field  
 Diurnals Corrected by PPM 400 Recording  
 Base Station  
 ACCURACY: +/- 1 nano-tesla  
 CONTOUR INTERVAL: 100  
 BACKGROUND: 57000



 <b>ROBERT S. MIDDLETON</b> <b>EXPLORATION SERVICES INC.</b>			
for <b>UNIGOLD RESOURCES LTD.</b>			
Title		MAP 4	
<b>MAGNETOMETER SURVEY</b>			
29744			
Date:	NOV/1986	Scale:	1:2500
Drawn:	C.G./L.R.	Approved:	
		N.T.S.:	File: M-224



LEGEND	
SOUNDING / RES	Shallow  strong weak moderate
	Deep
RESISTIVITY	Shallow  High Low
	Deep



REVISIONS	<b>ROBERT S. MIDDLETON</b> <b>EXPLORATION SERVICES INC.</b>		
	for	UNIGOLD RESOURCES LTD.	
	Title	MORIN PROPERTY	MAP 4
	GEOPHYSICAL COMPILATION		
	Date: NOV/ 1986	Scale: 1:2500	N.T.S.
	Drawn:	Approved:	File: M-224