



42H12SE0006 OM91-171 HURDMAN

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REPORT ON
NORONT RESOURCES LTD.
HURDMAN PROPERTY
PORCUPINE MINING DIVISION, ONTARIO

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FEBRUARY 1992

SUMMARY

Noront Resources Ltd. acquired the property from prospector Don McKinnon in mid 1991 and completed a review of all available data on the property prior to commencing a small exploration program in December 1991.

Previous work on the property in the mid 1960's by INCO and 1979-81 by Mattagami Lake Exploration Limited discovered zinc silver (+ - gold) mineralization at several locations in Hurdman and the surrounding townships.

No assay results are available for the INCO work however the results were significant enough for the company to complete drill testing of the most obvious targets in several townships in the area. INCO recently acquired more than 200 claim units north of the subject property and is currently undertaking drilling in an area where it reported gahnite (zinc spinel) mineralization in its 1960's drill program. It is interesting to note that gahnite was recently recognized on the subject property.

Mattagami Lake Exploration completed the most comprehensive work program in the area. The program began with an airborne magnetic and electromagnetic survey of the entire area, extending into Alexandra Machin and Beardmore Twps. Ground HLEM, magnetic, limited frequency IP surveying and geological mapping were also carried out.

Mattagami Lake completed diamond drill programs to evaluate geophysical targets in 1980 and 1981. They did not undertake any further work on the claims.

The drilling encountered numerous significant zinc and silver bearing zones in gneisses and what were termed pegmatites, however the zones were determined to be initially flat lying, erratic in nature and genetically related to the so called pegmatite dikes. Several intersections contained more than 1% zinc over widths of more than 20 ft.

A review of all of the available information relating to the property was completed by the author subsequent to acquisition of the claims by Noront Resources Ltd. This data included a 1991 Aerodat airborne geophysical survey carried out by prospector Don McKinnon.

This review clearly indicated that other geological and geophysical interpretations were possible using the same data. A proposal was made to Noront Resources Ltd. and a four hole diamond drill hole program was completed in December 1991.

The most significant results of the drilling were as follows:

Hole 1	212.6 - 256.9	44.3ft	2.41% zinc
Hole 2	198.5 - 203.5	5.0ft	2.48% zinc
Hole 3	195.2 - 322.2	127ft	1.9% zinc
	195.2 - 217.8	22.6ft	4.64% zinc
	229.3 - 253.6	29ft	2.53% zinc and
	311.7 - 322.2	10.5ft	4.82% zinc

Holes 1 and 3 are located 400 feet apart and may have intersected the same zone.

In addition to the significant assay results, alteration minerals commonly associated with highly metamorphosed base metal sulfide deposits were identified in the drill holes.

Anthophyllite, cordierite muscovite and gahnite are among the alteration minerals identified.

Based upon the significant results obtained recently and the author's knowledge of the area, a recommended work program comprised of linecutting, ground geophysics, geological evaluations and diamond drilling has been laid out and it is recommended that the company proceed with the work at the earliest possible date.

The entire program, including 15,000 feet of diamond drilling is budgeted to cost \$471,460.



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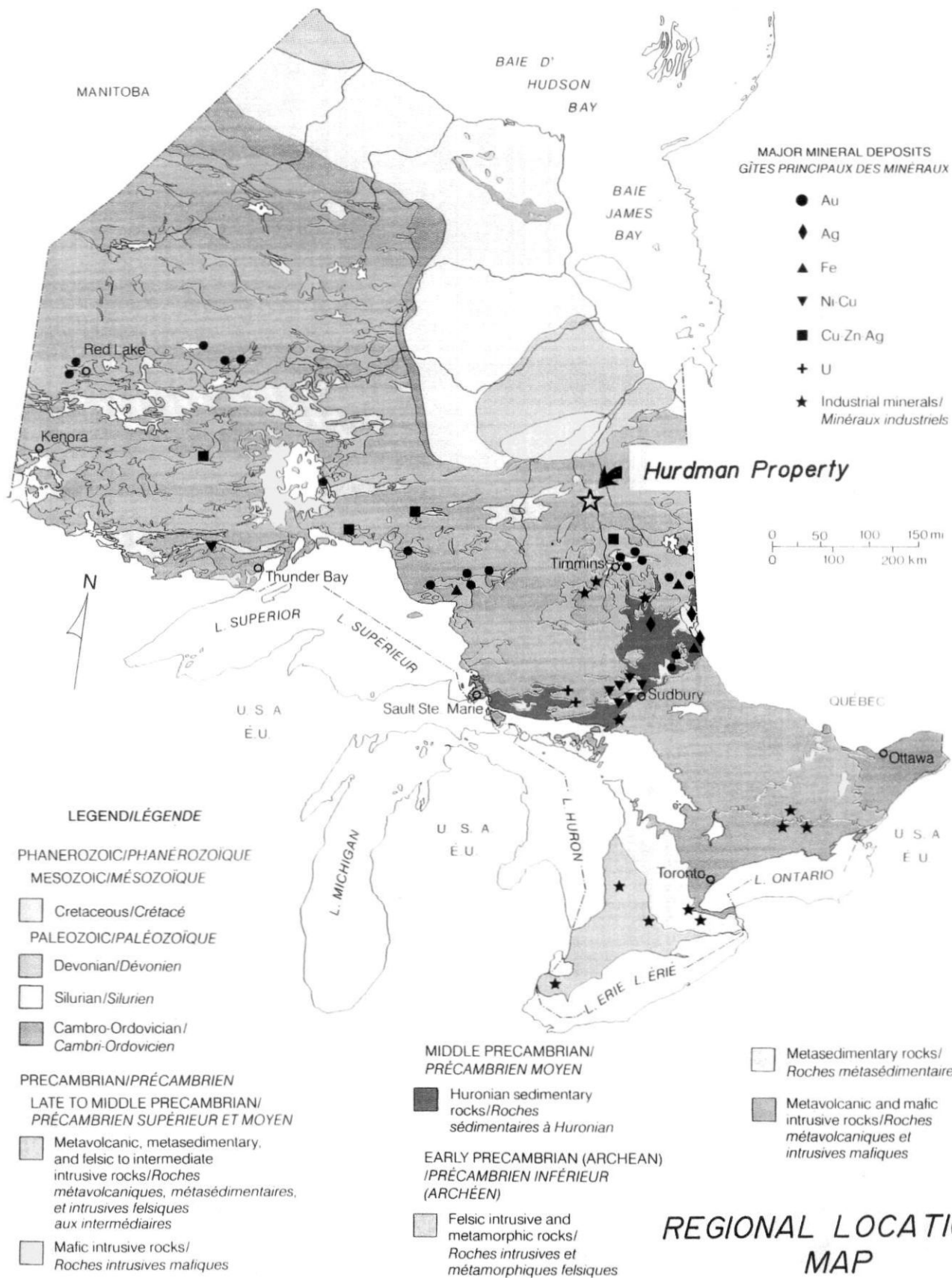
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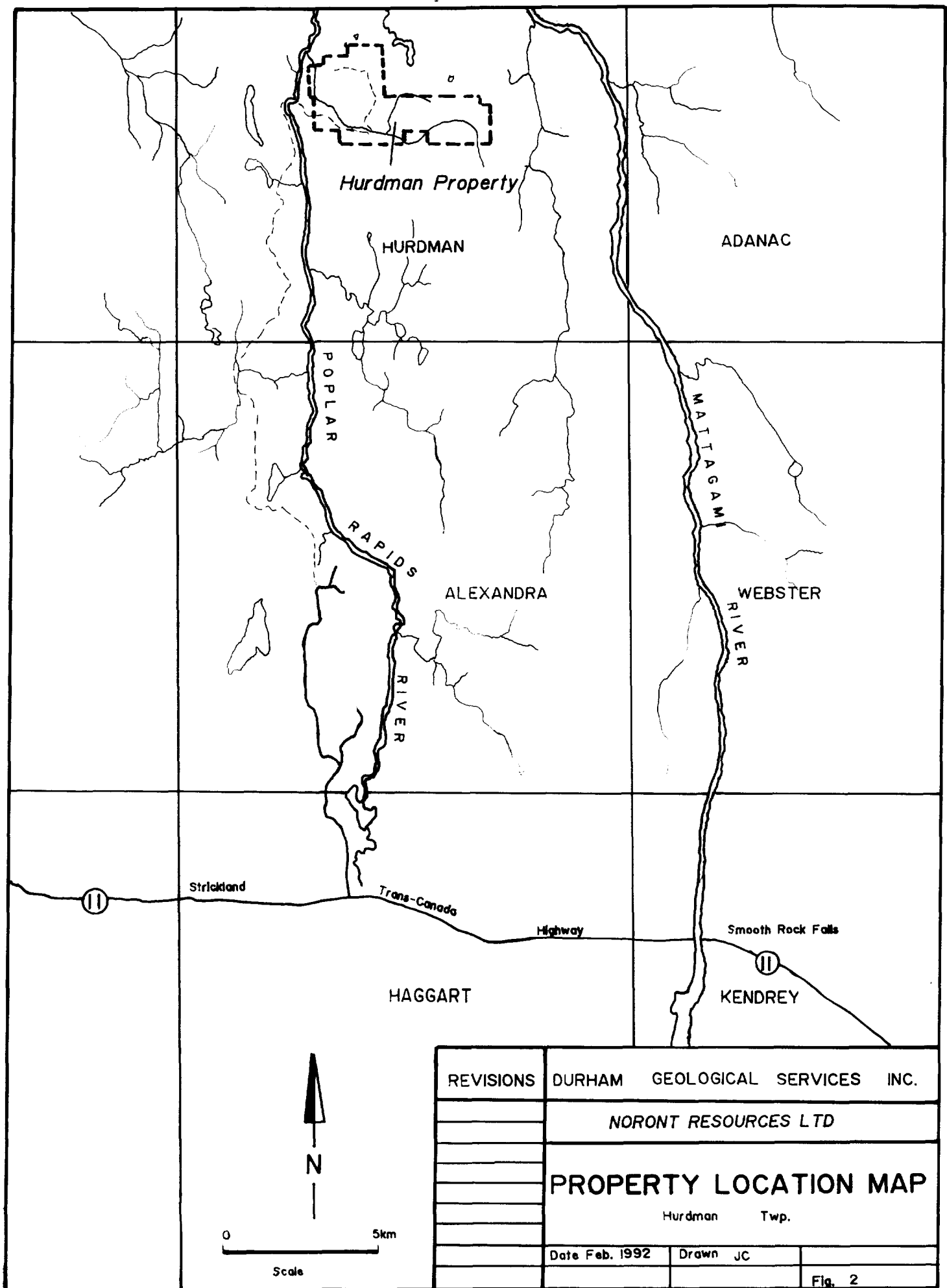


INTRODUCTION

This report has been prepared for Noront Resources Ltd in order to summarize the exploration history of the property, the recent exploration program completed by Noront Resources Inc. and provides recommendation for further exploration on the Hurdman Property.

Noront Resources Ltd's Hurdman property consists of 71 unpatented mining claims located approximately 17 miles northwest of the town of Smooth Rock Falls, Ontario. The claims are currently held in trust for Noront Resources Ltd.

The property encompasses several sulphide-rich zones which have yielded significant zinc concentrations within a poorly understood geological environment consisting of high-grade metamorphic metasedimentary-metovolcanic gneisses and migmatites. Recent drilling by Noront Resources Ltd. encountered significant zinc mineralization within disseminated sulphide zones which warrant further exploration. Whereas the known mineralization in the vicinity of the recent drill holes was thought to be genetically related to coarse grained, late pegmatite dikes, the mineralization is now interpreted to be related to stratabound, more felsic gneisses that dip more steeply north. The recent re-interpretation of the available geological and geophysical data indicates that the zinc bearing zones remain untested in all directions. Some of the alteration minerals, sillimanite, anthophyllite, muscovite, gahnite and cordierite are typically associated with volcanogenic massive sulphide deposits in high grade metamorphic terrain.



REVISIONS	DURHAM GEOLOGICAL SERVICES INC.	
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	PROPERTY LOCATION MAP	
	Hurdman Twp.	
	Date Feb. 1992	Drawn JC
		Fig. 2

PROPERTY DESCRIPTION

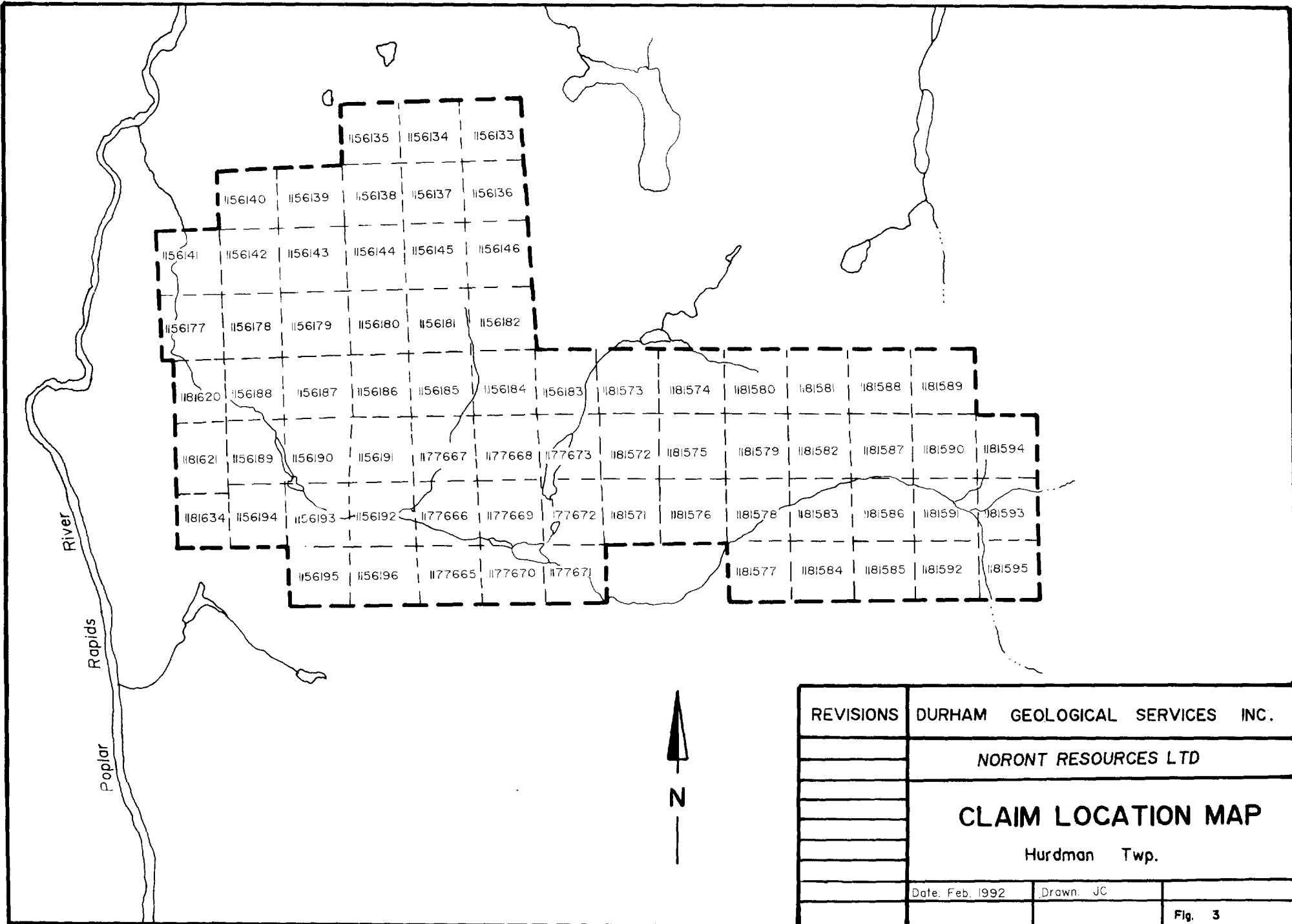
LOCATION AND ACCESS

The property is located approximately 17 miles northwest of the town of Smooth Rock Falls and 65 miles northwest of the mining centre of TIMMINS, ONTARIO, in northeastern Ontario (Figure 1,2). A large zinc refinery is located near Timmins.

Access onto the claim group is gained by travelling westward along Highway 11 from Smooth Rock Falls for a distance of 7.5 miles then northward along well maintained gravel logging roads for an additional 8 miles. From this point a winter drill road leads northward to the property as indicated in Fig. 2. During the summer months, the claim group is accessible by boat from Smooth Rock Falls along the Poplar Rapids River or by all terrain vehicle using the winter road system.

Ample power, labour force and supplies are available at Smooth Rock Falls and an all weather highway extends northerly to the Abitibi Canyon Hydro electric generating station approximately 12 miles east of the property (east of the Mattagami River).

The property is located 45 miles north of Falconbridge's Kidd Creek Mining Operation which provides the bulk of the zinc concentrate for the company's zinc refinery near Timmins. Spare capacity is available and the ore reserves at the Kidd Creek orebody are declining.



REVISIONS	DURHAM GEOLOGICAL SERVICES INC.	
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	CLAIM LOCATION MAP	
	Hurdman Twp.	
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		Fig. 3

CLAIM STATUS

The Hurdman property consists of 71 contiguous unpatented mining claims within the central portion of Hurdman Township in the Porcupine Mining Division, Ontario (Figure 3). The claims are currently held in trust for Noront Resources Ltd. , 55 Young St., Suite 301, Toronto, Ontario, M5E 1J4. Upon completion of the terms of the option agreement between Don McKinnon, Noront Resources Ltd., will earn a 60% interest in the property. The claims are further described as follows:

<u>CLAIM NO.</u>	<u>EXPIRY DATE</u>	<u>RECORDING DATE</u>	<u>NUMBER OF CLAIMS</u>
1156133-146	19/07/92	19/07/90	14
1156177-186	19/07/92	19/07/90	10
1156187-196	16/08/92	16/08/90	10
1177665-673	29/04/93	29/04/91	9
1181571-595	23/05/93	23/05/91	25
1181620	23/05/93	23/05/91	1
1181621	28/05/93	28/05/91	1
1181634	28/05/93	28/05/91	1

		Total	71 claims

Eighty man days assessment work was applied to all claims prior to the implementation of the revised Ontario Mining Act in June 1991. These credits are to be approved as \$1760 work per claim and the expiry date of each claim will be moved four years into the future (ie the earliest expiry date will be 19/07/96).

PHYSIOGRAPHY AND VEGETATION

The property's topography is typical of the Precambrian Shield in the region being of low relief with low hills and swampy areas. Relief seldom exceeds 10 meters and drainage is rather poor, resulting in an abundance of swampy terrain. Outcrop exposure is very limited with a moderately thick layer of glaciolacustrine and glaciofluvial sediments commonly 15 metres or more in thickness. The two major rivers within Hurdman Township, the Poplar Rapids and the Mattagami River drain the area northwards to James Bay.

Vegetation on the property consists primarily of black spruce and lesser balsam. Poplar and birch are restricted to the edges of creeks and rivers.

The only evidence of wildlife noted on the property are the numerous beaver dams.

PREVIOUS WORK

Significant interest in base metal exploration was initially generated within Hurdman Township with the rumoured discovery of zinc and copper mineralization by INCO Ltd. during the mid 1960's. The discovery resulted in sporadic periods of claim staking into the early 1970's, however the only substantial exploration program completed since the late 1960's was the Mattagami Lake program in 1979 - 1981.

The following is a brief description of exploration activities carried out previously on the Hurdman property.

1965-1966 : INCO Ltd. completed ground magnetic and electromagnetic surveying and a total of 5278.5 ft of diamond drilling (17 holes) within the central and northwestern portions of the current property. Disseminated to massive sulphide mineralization was reported in the majority of the holes. Sphalerite and chalcopyrite mineralization was noted in the drill logs for many of the holes, however, no assay results were ever submitted.

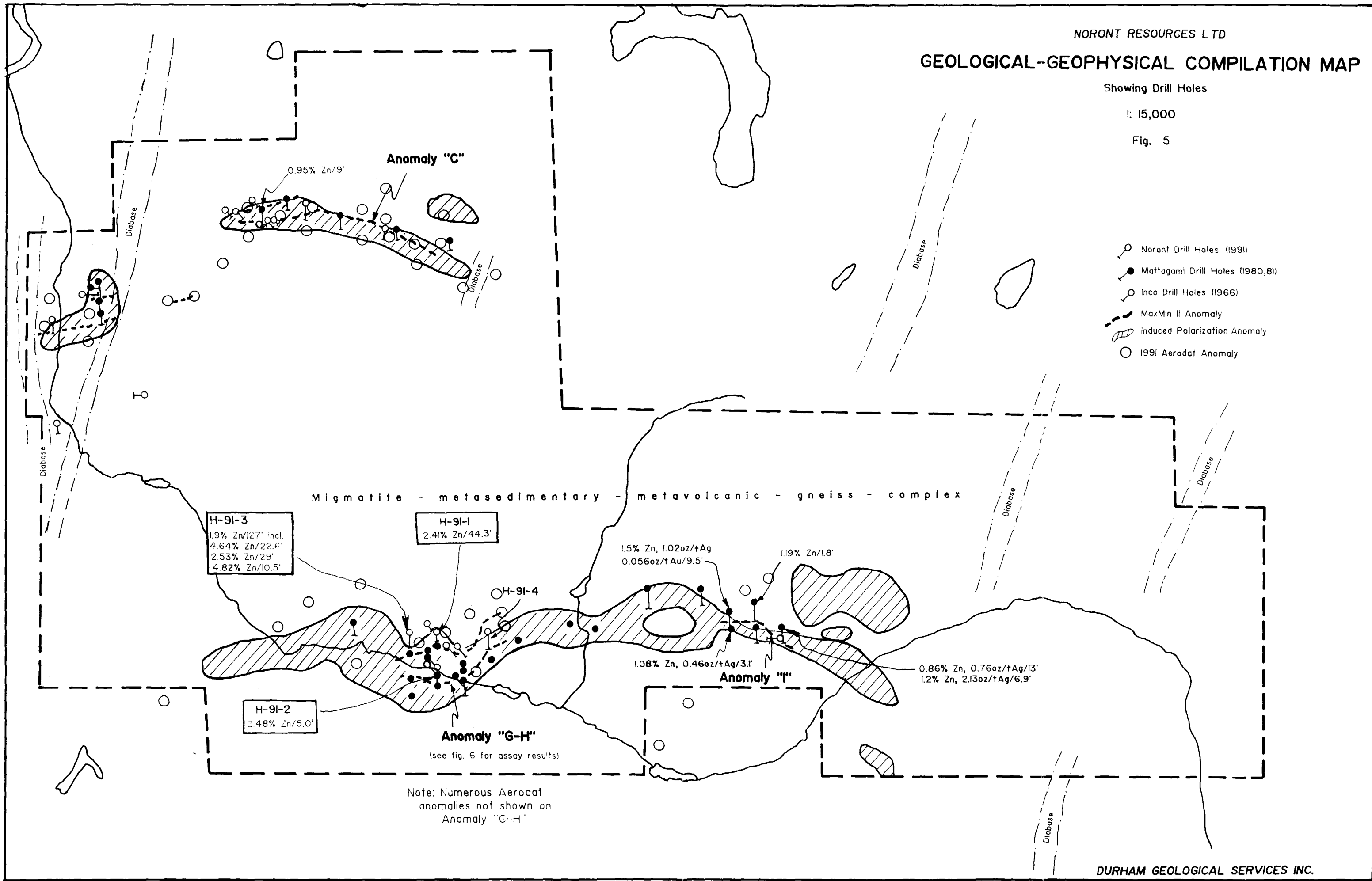
1979: Prospector Don McKinnon staked over ground encompassing the property and later optioned the claims to Mattagami Lake Exploration Ltd.

GEOLOGICAL-GEOPHYSICAL COMPILATION MAP

Showing Drill Holes

1: 15,000

Fig. 5



1979-1981: Mattagami Lake Exploration Ltd. carried out an extensive airborne magnetic and INPUT electromagnetic survey over parts of several townships including Hurdman. This was followed by linecutting, geological mapping, geophysical surveying and follow-up diamond drilling on various claim groups within Hurdman, Beardmore and Alexandra Townships. At this time, the current Hurdman property was covered by magnetometer and Max-Min II surveys, limited frequency mode induced polarization surveying and 11,121.5 feet of diamond drilling (33 holes). Significant zinc and silver values were obtained from testing an extensive sulphide- rich conductive horizon in the south-central portion of the property (Anomalies -13-G-H-I). The best results obtained from the two phases of drilling on this zone were as follows:

80-9	0.64% Zn, 1.1oz/t Ag/65ft
80-15	1.39% Zn/35ft
81-29	1.01% Zn, 1.01oz/t Ag/21ft and 0.7% Zn, 1.13oz/t Ag/25.5ft
81-30	2.41% Zn/37.7ft
81-40	1.27% Zn/26.5ft

Mattagami Exploration Limited determined that the mineralization dipped north at 20 degrees or less, (as per Fig. 7) that the zinc mineralization was erratic in its distribution and was genetically

related to "pegmatite" diiking. They determined that no further work was warranted and eventually allowed the claims to lapse.

1990-1991: Prospector Don McKinnon restaked a large block of claims including the subject property and subsequently completed an airborne survey over all of the claims.

The survey was contracted to Aeorodat. Interpretation of the data revealed the presence of several strong and several weak EM responses on the property. The survey was flown nearly at right angles (N-S) to the Mattagami Lake Exploration airborne survey in an attempt to provide a clearer interpretation of the magnetic and EM responses in the area.

1991: Noront Resources Ltd. optioned the 71 claims Hurdman property which encompassed the most promising base metal horizons within the area.

A review of all available data was completed, new ideas regarding the genesis of the mineralization and its attitude were formulated, and with the help of the OMIP program, an abbreviated exploration program commenced in late November 1991.

A total of two miles of magnetometer and Max Min II surveying was completed over portions of Anomaly G-H-I and four diamond drill holes totalling 1492 ft were drilled. Significant zinc mineralization was encountered in three of the four holes associated with disseminated to massive sulfides. The composite assay results are as follows:

H-91-1	2.41% Zn/44.3ft
H-91-2	2.48% Zn/5.0ft
H-91-3	1.9% Zn/127ft

The significance of the results are covered in later sections.

1992: Galico Resources Inc. entered into an option agreement with Noront Resources Ltd. and Don McKinnon allowing them the right to earn a 55% interest in the Hurdman Property.

REGIONAL GEOLOGY

On a regional basis , the Hurdman Twp. area northwest of Smooth Rock Falls Ontario is located near the northern boundary of the Wawa Subprovince of the Precambrian Shield. It is near this Subprovince boundary that the basemetal deposits of the Manitouwadge area are located. A recent map issued by the MNDM of Ontario shows the Subprovince boundary extending easterly from the Manitouwadge base metal camp to the vicinity of the Hurdman Twp.



LEGEND

- 5 Mafic to Intermediate Metavolcanic Rocks
- 6 Felsic to Intermediate Metavolcanic Rocks
- 7a Paragneisses and Migmatites
- II Gneissic Tonalite Suite with supracrustal inclusions

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**REGIONAL GEOLOGY
MAP**

Date Feb 1992 Drawn H H

Scale 1:1000000 Figure 4

area.

Geological correlation and interpretation in the area along the Subprovince boundary becomes more difficult towards the Hurdman Twp. area due to a lack of data and a much higher degree of metamorphism as the Kapuskasing structural zone is approached.

While little is known of the geological history of Hurdman Township, the available information indicates that much of the area is underlain by gneisses of sedimentary or volcanic-tuffaceous origin. Geological interpretation is hampered by the ubiquitous overburden cover, a general lack of previous work, and the very high degree of regional metamorphism. This upper amphibolite to granulite facies grade metamorphism was caused by forces related to the Kapuskasing Structural Zone. Metamorphism associated with this series of northeast striking, deep seated structures and related intrusions has destroyed all recognizable primary structures.

West and southwest of Hurdman Twp. mafic to intermediate volcanic rocks, felsic flows and pyroclastics, greywacke, argillite, quartzite, arkosic sandstones and iron formation have been recognized (Nielson, P. 1979).

With increasing metamorphic grade these lithologies become amphibolite, quartz feldspar gneisses, biotite quartz feldspar gneisses and garnetiferous biotite quartz feldspar gneisses. The gneisses vary from near massive, uniform units to segregated and banded units. Hybrid granite gneiss, granodiorite, quartz monzonite and pegmatite have been described throughout Hurdman Twp.

Proterozoic diabase dikes intrude all other rock types in the

area. The known dikes trend northerly throughout the area.

PROPERTY GEOLOGY

Outcrop exposure is virtually absent on the property and as such all information regarding property geology is gleaned from historical drill logs, diamond drill core and interpretation of geophysical data.

The available information indicates that the property is underlain predominantly by quartz-feldspar-biotite gneisses, hornblende biotite quartz feldspar gneisses, garnet quartz biotite feldspar gneisses, and quartz feldspar gneisses. Granodiorite, pegmatite, lit-par-lit gneisses and diabase dikes have been identified.

Logging of recent drill core by the author indicates that in addition to the gneisses noted above, alteration minerals such as sillimanite, anthophyllite, muscovite, tremolite, cordierite and gahnite were identified. The occurrence of the latter mineral has been found to be largely restricted to areas where significant zinc mineralization is located.

It is quite possible that all of these alteration minerals were present in prior drilling but were not properly identified.

Complex geophysical pattern, indications of fold structures in drill core, and the lack of continuity of geological units from drill hole to drill hole all point to a complex local geological history.

While airborne geophysics and ground geophysical surveys

completed to date have been valuable sources of information, the fact that the mineralization intersected in the recent drilling is relatively non-conductive and non-magnetic, definition of drill targets is not a simple process.

Small concentrations of magnetite in the gneisses, coarse grained felsic dikes, and diabase dikes makes interpretation of the magnetic data extremely tenuous.

Little is known of the structural history of the Hurdman Twp. area. Even on a local scale there seems to be little in the way of consistent information with respect to strike, dip, faults and folding.

Geological mapping by Mattagami Lake Mines Ltd. in 1979 found that gneissic foliation in Hurdman Twp. and Alexandra Twp. varied from 045 degrees to 120 degrees in trend and dips were found to vary from 30-45 degrees south and west. Indications of intense folding were noted.

Close examination of the core from the four Noront holes completed in December 1991 seems to indicate that the structural history of the area may be quite complex.

Geophysical discontinuities in the area would tend to support this idea.

The very limited structural data base will undoubtedly necessitate close attention to structural detail as work on the property proceeds.

RECENT EXPLORATION PROGRAM

In November 1991 Noront Resources Ltd. conducted a review of the available data relating to the Hurdman Twp. property in order to determine how best to proceed with the evaluation of the mineral potential of the property.

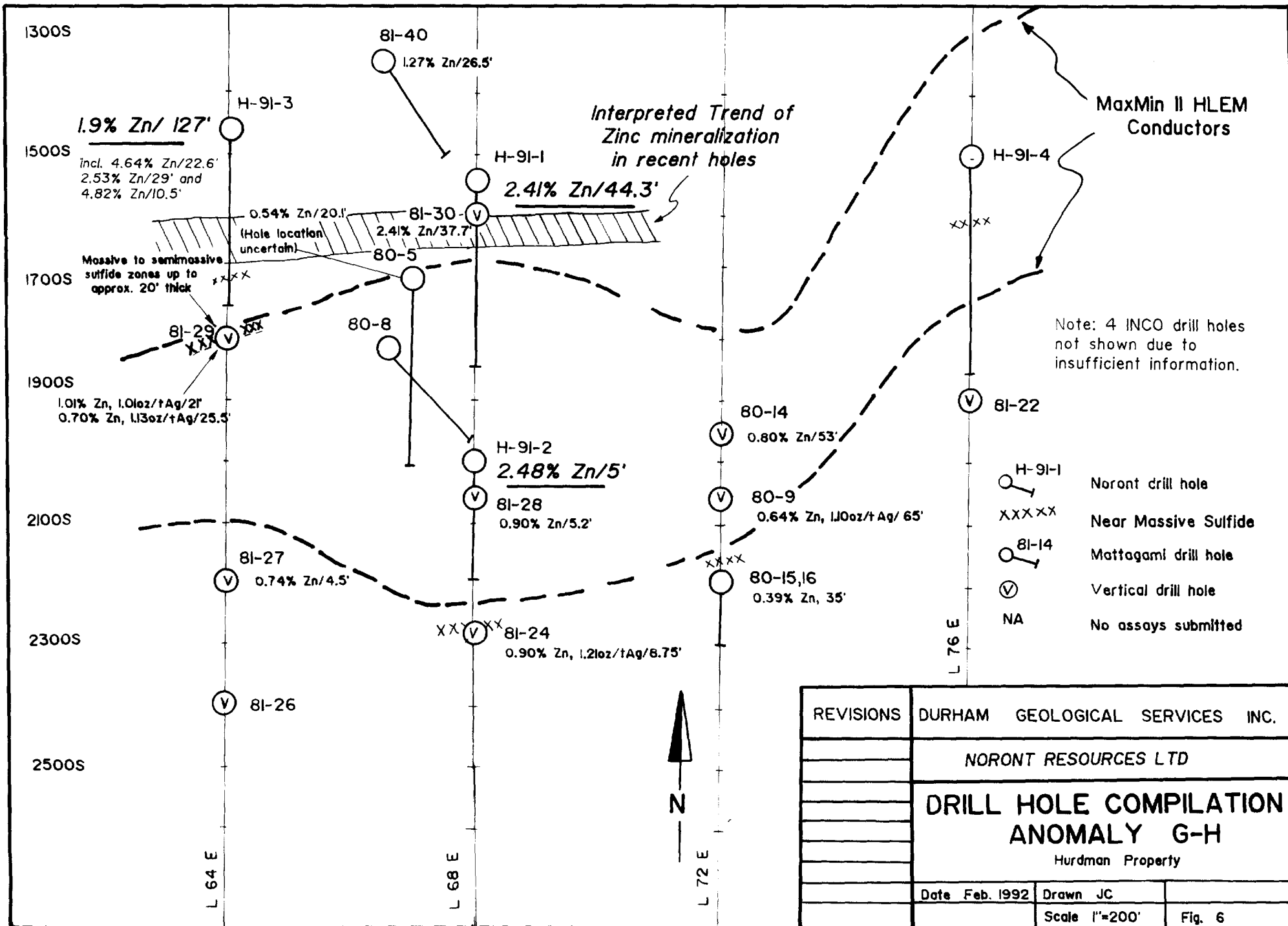
The review indicated that while at least 11,121 feet had been completed in the vicinity of Mattagami Lakes ground geophysical anomaly 13 G and H, very few, if any had fully cross-sectioned the geophysical targets. The geological premise of most of the Mattagami Lake drilling was that the significant zinc-silver mineralization was restricted to erratic, shallow dipping zones associated with pyrite-pyrrhotite mineralization on the contacts of so called "pegmatite dikes".

Many of Mattagami Lakes holes were drilled vertically into Calculated Metal Factor anomalies based on a frequency effect I.P. survey that was carried out with an "a" spacing of 200 feet.

Only a small percentage of these holes adequately explained the anomalies.

The ground HLEM survey carried out by Mattagami Lake was also reviewed. Mattagami Lake completed the survey using a coil separation of 600 feet. Detailing was done using a 400 foot separation.

Mattagami Lakes' geological interpretation of the geology in the vicinity of anomaly 13 G & H is presented in Fig. 7. The author's review of the HLEM data and the available geological information from drill holes failed to support the idea of a "very



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	DRILL HOLE COMPILATION	
	ANOMALY G-H	
	Hurdman Property	
	Date Feb. 1992	Drawn JC
	Scale 1"=200'	Fig. 6

shallow dip" or the "genetic relationship between mineralization and pegmatite dikes".

In order to prove or disprove the new theories relating to the dip and nature of the mineralization a limited exploration program was laid out.

To this end, Mattagami Lakes 1979 grid was used as control. A geophysical-linecutting crew was dispatched December 1, 1991 and the work was completed December 5, 1991. Approximately 4km of line was re-established on the 1979 grid and lines 64E to 76E inclusive, and lines 112E and 116E were covered by the Max Min HLEM and magnetic surveys. A 300 foot coil separation was used for the HLEM survey. This shorter coil separation was selected to provide better definition of the previously located HLEM anomalies.

While good definition of some features was obtained, others that were outlined with the longer coil separation were not detected due to conductive overburden or excessive depth to the top of the conductive zone.

Drill targets were selected and the drill was mobilized the first week of December. The drill contractor, Norex Drilling of Porcupine opened the road from Hwy 11, 7.5 miles west of Smooth Rock Falls, northerly a distance of 20 miles to the proposed drill area. Three bridges were required to cross two creeks and the Poplar Rapids River.

The first drill hole was drilled to test what was determined to be a weak Max Min HLEM anomaly in the vicinity of Mattagami Lake drill hole 81-30, a vertical hole that intersected a sphalerite

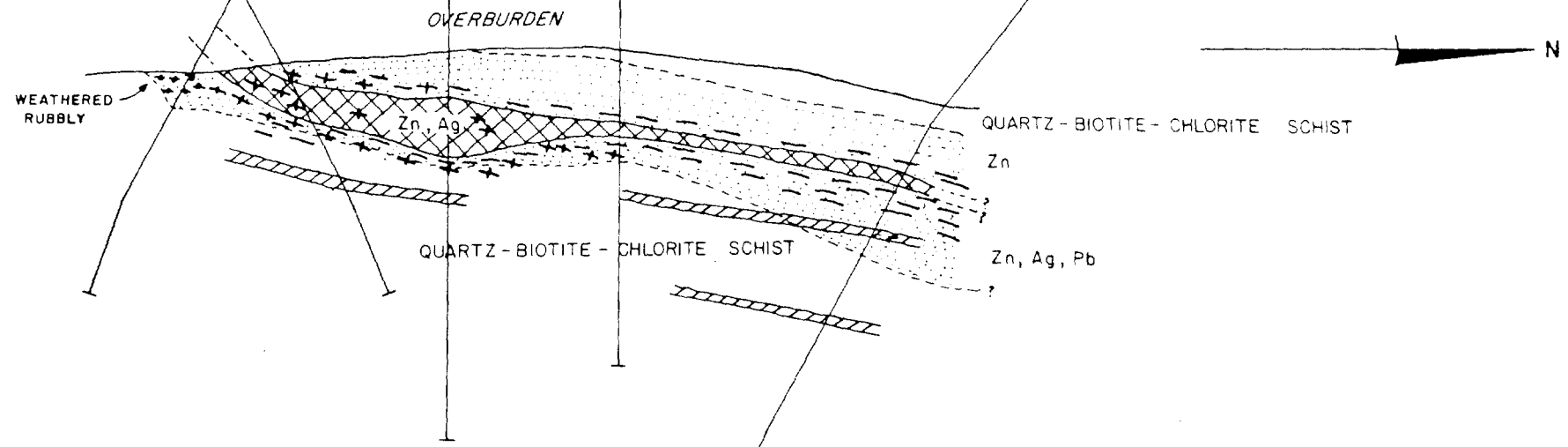
bearing zone in gneissic rocks and pegmatite. This mineralized zone contained individual zinc assays as high as 15.3% zinc and averaged 2.41% zinc over a core length of 37.7 feet. Noront hole 91-1, collared on line 68E at 15 + 50S, was drilled south at -55 degrees. A sphalerite mineralized gneiss zone was intersected in the hole from 212.6 - 256.9 feet (44.3 ft.). The zone contained an average of 2.41% zinc.

The mineralized zone is comprised of disseminated, medium to coarse grained brownish-red sphalerite that tends to occur as interstitial grains and thin bands. Through most of the zone pyrite is the only other significant sulfide except in the interval from 247.7 to 252.6 feet where a band of pyrrhotite feldspar cordierite occurs. If persistent, this narrow zone would account for the weak HLEM anomaly.

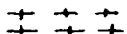

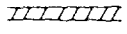


The mineralized zone is hosted within leucocratic gneiss comprised of fine to coarse quartz and feldspar with lesser but important sillimanite, cordierite tremolite anthophyllite, phlogopite and muscovite. A finer grained, darker gneiss above the mineralized zone contains sillimanite anthophyllite traces of sphalerite and up to 3% gahnite (zinc spinel), a mineral commonly found associated with zinc deposits.

The hole successfully intersected the extension of the mineralization intersected in the Mattagami Lake hole 81-30 some 80 feet away, and appears to have confirmed the presence of a conductive, near massive sulfide zone in the vicinity of 1750S. The mineralized zone was intersected deeper in the hole than

23 S 22 S 21 S 20 S 19 S 18 S 17 S 16 S 15 S



LEGEND

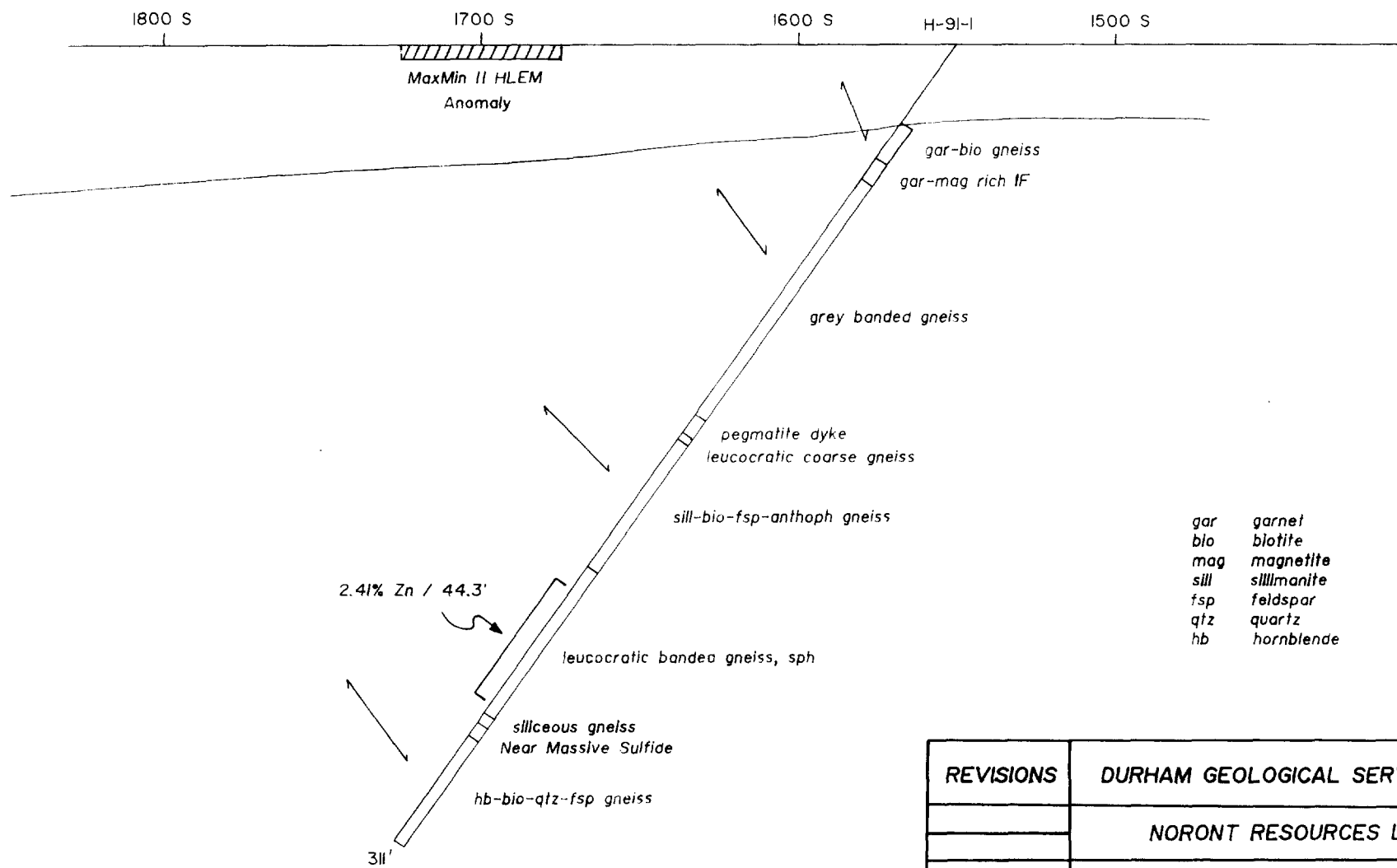
-  : QUARTZO-FELDSPATHIC UNIT
-  : SERICITE
-  : PEGMATITE
-  : DISSEMINATED PY, PO & GAL SPH VEINS (tr-15%)
-  : MASSIVE PY & PO tr-10% SPH

MATTAGAMI LAKE

GEOLOGICAL INTERPRETATION

figure 7

MATTAGAMI LAKE EXPLORATION LTD <i>TIMMINS, ONTARIO</i>	
PROJECT : HURDMAN	
ANOMALY : G	
SECTION : 72 E	
GEOLOGY BY : P. NIELSEN	DRAWN : R. KRUSE
DATE : MAY 1980	SCALE : 1" = 100'



gar garnet
 bio biotite
 mag magnetite
 sill sillimanite
 fsp feldspar
 qtz quartz
 hb hornblende

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	DRILL HOLE H-91-1		
	L68E		
	Date Feb 91	Drawn HH	
		Scale 1"=50'	Figure 8

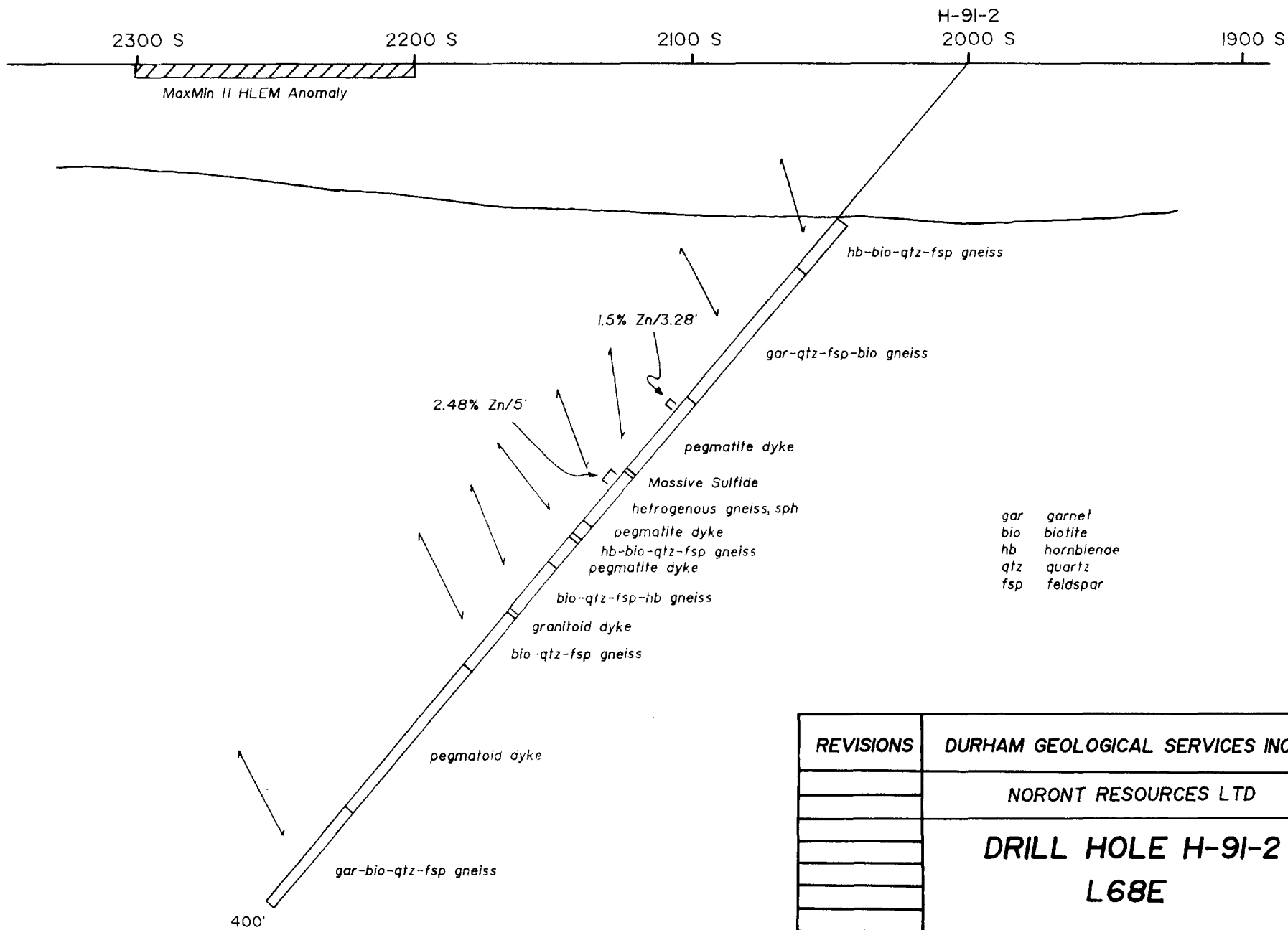
anticipated however, indicating an apparent dip of approximately 25-30 degrees. Because the holes were drilled more than 10 years apart and the grid reconstruction is approximate; the relative location of these holes is approximate and the distance between the collars will affect the apparent dip.

The strike direction of the mineralized zone, local faulting and folding may also affect the dip of the mineralized zone. If the mineralized zone were to dip at 20 degrees or less it should have been intersected in Mattagami Lake holes M1 80-8, 81-28 and 81-24, all drilled up-dip of hole 91-1 and hole 81-80 drilled to the northwest of 81-30. Hole 81-40 did intersect a sphalerite bearing zone that contained 1.27% zinc over 19.8 feet, however, that core was available for review at the MNDM Core Library in Timmins and the mineralization appears to occur in a different geological setting.

More drilling is required to determine the overall strike and dip of this zone.

Hole 2, located on line 68E at 20+00S, was drilled south at minus 50 degrees to test a very strong HLEM anomaly located between 22 and 24S.

The hole entered bedrock at 74 feet and weak sphalerite mineralization was intersected from 157.8 to 159.1ft. A coarse grained dike was intersected from 159.1 to 194ft. At the lower contact of the dike, a 0.3 foot band of NMS, largely po was intersected. In the interval from 193.7 - 218.5ft. a zone of highly variable gneiss was intercepted. Some anthophyllite,



gar garnet
 bio biotite
 hb hornblende
 qtz quartz
 fsp feldspar

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	DRILL HOLE H-91-2		
	L68E		
	Date Feb 91	Drawn HH	
		Scale 1"=50'	Figure 9

sillimanite and tremolite were noted in this section. A 0.3 foot band at 202ft. contained 20% sphalerite.

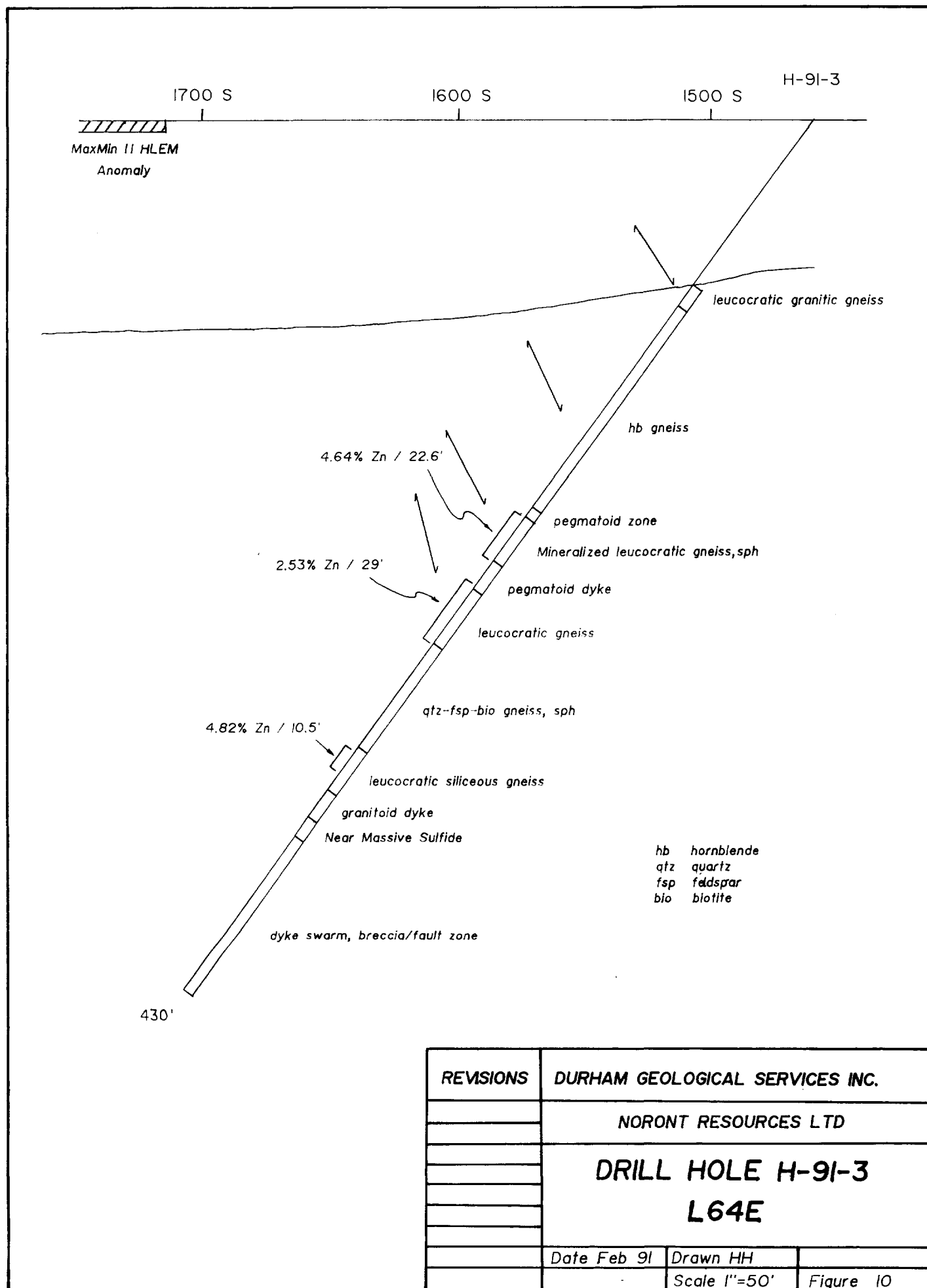
The intervals 218.5 to 236ft., and 268.7 to 274ft. and 285.4 to 353.3ft. are comprised of coarse grained dike material. The intervening gneisses are biotite quartz feldspar gneisses. The hole ended in garnet biotite quartz feldspar gneiss.

Other than the one 0.3 foot band of NMS, the conductor was not explained even though Mattagami Lake vertical hole 81-24 near the interpreted conductor axis intersected an average of 20% py-po sphalerite over 15ft at the collar of the hole. It would appear that the conductor dips south or that the hole intersected a late coarse grained dike where the conductor was located.

The best mineralization intersected in the hole was a 5ft section from 198.5 to 203.5ft. which assayed 2.48% zinc.

Hole 91-3, collared at 14 + 60S on line 64E, was designed to determine the dip of the massive sulfide zone intersected in Mattagami Lake vertical hole 81-29 and to test for mineralization north of that hole. The conductor on this line is of fair conductivity with a 300ft coil separation and appears wider and stronger with a 600ft coil separation.

The hole collared in hornblende biotite quartz feldspar gneiss. A sphalerite bearing gneiss zone was intersected from 195.2 to 322.2ft., a core length of 127ft. Within that interval a pegmatoid zone, possibly a dike was intersected. This dike contained significantly less zinc mineralization than the surrounding gneisses and averaged less than .5% zinc. A 50ft



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	NORONT RESOURCES LTD		
	DRILL HOLE H-91-3		
	L64E		
	Date Feb 91	Drawn HH	
		Scale 1"=50'	Figure 10

section of relatively unmineralized gneiss was also encountered from 258.5 to 309.4ft.

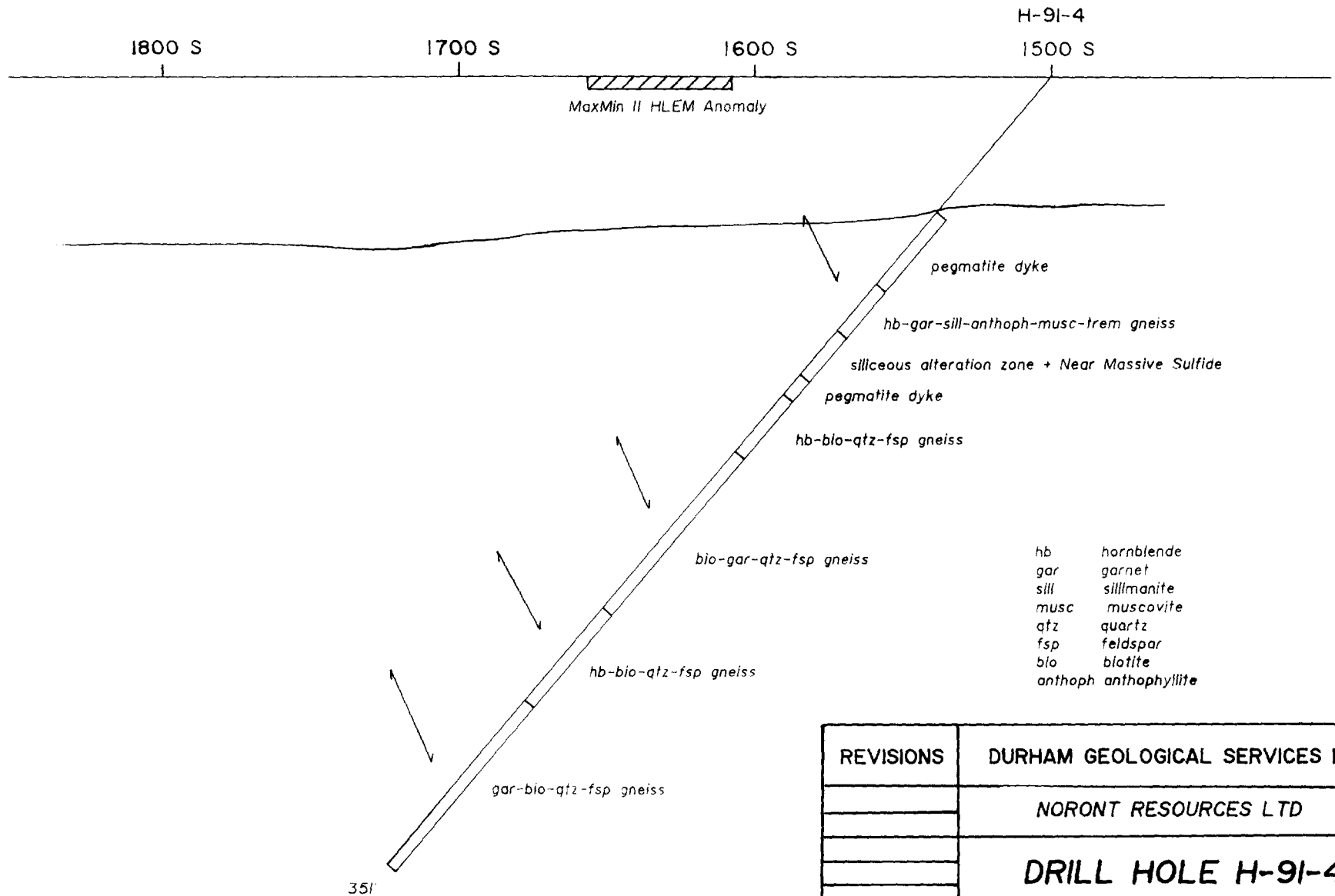
The mineralized zone above the dike assayed 4.64 % zinc from 195.2 to 217.8 (22.6ft), a mineralized zone below the dike assayed 2.53 % zinc from 229.3 to 258.5 (29.2ft) and a mineralized zone below the barren gneiss that assayed 4.82 % zinc from 311.7 to 322.2 (10.5ft).

Below the zinc mineralized zone the hole intersected very coarse grained massive pyrrhotite-pyrite-cordierite from 342.8 to 353.3ft. This zone likely correlates with some of the near massive sulfide intersected in vertical hole ML-81-29.

The hole ended in a dike swarm that appears to run sub parallel to the drilling direction. More drilling is required to fully cross-section the HLEM anomaly.

Hole 4, collared on line 76E at 1600S was drilled to intersect a HLEM anomaly centered at 17+50S. The hole collared in coarse grained dike material at 60.7ft. From 91.9ft - 112.5ft. a heterogeneous section of gneiss was intercepted. Sections of the gneiss contained minor anthophyllite, sillimanite, muscovite tremolite and minor gahnite.

The section from 112.5 to 132.2 is comprised of siliceous gneiss and in that interval gold assay values as high as 0.082 opt., silver values up 4 opt. and zinc values up to 0.87% were obtained. A pegmatoid zone occurred below the sulfide zone and the remainder of the hole was drilled in barren gneisses.



hb hornblende
 gar garnet
 sill sillimanite
 musc muscovite
 qtz quartz
 fsp feldspar
 bio biotite
 anthoph anthophyllite

REVISIONS	DURHAM GEOLOGICAL SERVICES INC.	
	NORONT RESOURCES LTD	
	DRILL HOLE H-91-4	
	L76E	
	Date Feb 1991	Drawn HH
		Scale 1"= 50'
	Figure 11	

CONCLUSIONS

Exploration in Hurdman Twp. was first initiated in the mid 1960's as exploration proceeded outward from the Timmins area, in search of the next Kidd Creek deposit. Subsequent to rumours of a zinc discovery in central Hurdman Twp. by INCO, most of Hurdman and the surrounding townships were staked. Rudimentary geophysical techniques and a lack of concrete assay values contributed to the lack of follow-up work in the area.

The only significant work program completed in the area since that time was a Mattagami Lake Exploration program completed between 1979 and 1981. The exploration effort was spread over parts of Hurdman, Alexandra and Beardmore Twps. In spite of intersecting significant zinc-silver and gold values the project was not funded beyond 1982.

One of the main reasons for not continuing was that the company interpreted the zinc mineralization to be erratic concentrations restricted to the contacts of flat lying pegmatite dikes.

While dikes do occur in the area it is the author's opinion that the most significant mineralization found to date is stratabound, disseminated to near massive sulfide in gneisses that reflects hydro thermal alteration.

Sillimanite, tremolite, muscovite cordierite, anthophyllite and garnet are minerals typically associated with base metal massive sulfide deposits and their presence, associated with zinc bearing sulfides is suggestive that mineable zinc deposits may be

located nearby.

In all future exploration programs, bulk geochemistry, mineralogy and structure should be considered the keys to the discovery of ore grade mineralization.

This is an exciting exploration project, with tremendous potential and it is located close to infrastructure . Exploration should continue as soon as reasonably possible.

RECOMMENDATIONS

The results of the small exploration program completed by Noront Resources Ltd. in December 1991 were very encouraging.

While geological and structural controls are still not well understood, the assay results and geological environment are such that a much more significant exploration is deemed warranted and is hereby recommended.

A visit was made to the property on February 12, 1992 and it was found that INCO Exploration has opened the road to the property and beyond using a D-7 tractor and a grader. INCO holds a 3200 ha property in the townships immediately north of Hurdman Twp. The INCO property was acquired approximately nine months ago in an area where INCO did a small amount of work in the mid 1960's and drilling is about to commence. It is known that some zinc spinel, a mineral found in zinc deposits (gahnite) was intersected in their 1960's drilling. This mineral was identified in the Noront drill core also.

Work on the Hurdman Twp. claims should commence immediately to take advantage of the existing road and the ideal winter conditions. Work programs completed between now and early April are more cost effective since access is much easier. High water and melting ground frost in late April and much of May will make crossing the Poplar Rapids River nearly impossible and road access will be very poor.

Work could continue through breakup using fixed wing and helicopter support.

The recommended work program should proceed as follows:

- 1) Grid line cutting approximately 120km @ \$250/km
(some two directional grid areas)
- 2) Geotechnical Work - thin sections
 - whole rock analysis
 - general research
- 3) Max Min II HLEM surveying (3 frequencies)
 - 150m coil separation
 - 100m coil separation for detailing
- 4) Magnetic Survey - Approximately 120km
- 5) IP Surveying Time Domain Mode
 - a= 25m pole dipole array
 - n= 1-4
- 6) Test Time Domain EM - EM-37
 - To be completed to resolve conductor configurations
- 7) Diamond Drilling - 15,000 feet approximately
 - 10,000 in the L64-76E area and 5,000 feet on other targets defined during the program.

The estimated cost of the proposed work is as follows:

1) Linecutting - 120km @ \$240/km	= \$ 28,800
2) Geotechnical Work - research analyses etc.	= \$ 10,000
3) Max Min II HLEM Survey - 120km @ \$180/km	= \$ 21,600
- Detailing 30km @ \$180/km	= \$ 5,400
4) Magnetic Survey - 120km @ \$90/km	= \$ 10,800
5) Time Domain I.P.- 30 days @ \$1500/day	= \$ 45,000
6) Test Time Domain EM Surveying	
- 10 days @ \$1800/day	= \$ 18,000

Sub Total	= \$139,600

7) Diamond Drilling - quote from Norex Drilling

- Mobilization/Demobilization	- n/c	
- Moves	- n/c	
- Dip Tests	- n/c	
- Waterlines	- n/c	
- Core boxes	- n/c	
Casing/drilling \$15.00/foot or less		
- 15,000 feet @ \$15.00/ft.		= \$225,000
Core Logging, drill supervision, spotting holes etc.		= \$ 20,000
Core Splitting		= \$ 10,000
Assaying		= \$ 10,000
Vehicle, travel, accommodation		= \$ 6,000
Consulting and reports		= \$ 18,000

Sub Total		= \$289,000
Total		= \$428,600
Contingency 10%		= \$ 42,860

Grand Total		= \$471,460

The scope and size of the proposed program will provide for the adequate definition of all significant obvious targets on the claims and allow each target to be drill tested. A significant amount of drill footage has also been allocated to drill the strike and dip extensions of the mineralized zones recently tested by NORONT RESOURCES LTD.

The non conductive style of mineralization, the complications of folding and faulting, the lack of outcrop and the high metamorphic grade makes this a challenging target. These same features however are also contribute to positive factors such as coarse granularity of the sphalerite, and possible thickening of zones in fold noses.

The proximity to the Falconbridge Smelter site at Timmins is a very positive factor for this and any other base metal property

in the area.

This mineralization has definite mineralogical and geological similarities to base metal mines at Manitouwadge, Winston Lake, and some of the base metal mines of norther Manitoba. As near surface mineralization goes, the original values intersected above the Winston Lake and Louvicourt base metal deposits were not nearly as high as those encountered on the Hurdman property.

Persistence and a sound technical approach should be maintained throughout the program.

Re-pectfully Submitted:



R. Bruce Durham
Consulting Geologist

APPENDIX



42H12SE006 CM91-171 HURDMAN

Durham Geological Services Inc.
 P.O. Box 1330
 Timmins, Ontario
 P4N 7J8

DIAMOND DRILL HOLE LOG

PROJECT: NORONT RESOURCES LTDAREA: HURDMAN TWP.CLAIM NUMBER: P.1156192CORE SIZE: BQDRILLED BY: NOREX DRILLING.LOGGED BY: BRUCE DURHAMCORE STORED AT: TIMMINS CORE LIBRARYOBJECTIVE: Test for Dip and Continuity
of Mineralization in Mattagami hole 30.HOLE NUMBER: H-91-1LOCATION: L 68E 15⁷ 50 S.AZIMUTH: 180°DIP: -55°DATES: December 11 - 12 1991CASING: 9M.LENGTH: 95M.

DIP TESTS: _____

Durham Geological Services Inc.
P.O. Box 1330
Timmins, Ontario
P4N 7J8

DIAMOND DRILL HOLE LOG

PROJECT: NORONT RESOURCES LTD

HOLE NUMBER: H-91-2

AREA: HURDMAN TWP.

LOCATION: L68E 20+09S.

CLAIM NUMBER: P 1156192.

AZIMUTH: 180°

CORE SIZE: BQ.

DIP: -50°

DRILLED BY: NORONT DRILLING.

DATES: December 13, 1991

LOGGED BY: BRUCE DURHAM

CASING: 22 M.

CORE STORED AT: TIMMINS CORE LIBRARY

LENGTH: 122 M.

OBJECTIVE: TEST SOUTH PART OF GROUND
EM ANOMALY 13 G-H.

DIP TESTS: _____

B. Durham

Durham Geological Services Inc.
P.O. Box 1330
Timmins, Ontario
P4N 7J8

DIAMOND DRILL HOLE LOG

PROJECT: NORONT RESOURCES LTD HOLE NUMBER: H-91-3

AREA: HUDMAN TWP LOCATION: L64E 14+60S.

CLAIM NUMBER: P1156192 AZIMUTH: 180°

CORE SIZE: BQ DIP: -55°

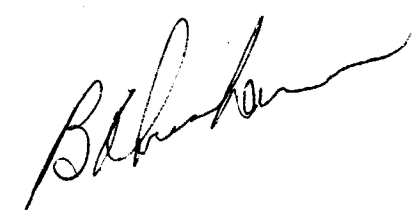
DRILLED BY: NORON DRILLING. DATES: December 14, 15 1991

LOGGED BY: BRUCE DURHAM CASING: 25 M.

CORE STORED AT: TIMMINS CORE LIBRARY LENGTH: 131 M.

OBJECTIVE: TEST DIP OF MINERALIZATION
IN MATTAGAMI HOLE H-29.
AND TEST NORTH EDGE OF CONDUCTOR.

DIP TESTS: _____



Durham Geological Services Inc.

Company: NORCON RESOURCES LTD Sample Type: CORE H-91-3

Property: HURDMAN No. of Samples: 27

Twp./Area: HURDMAN TWP. Shipped to: BELL WHITE LABS.

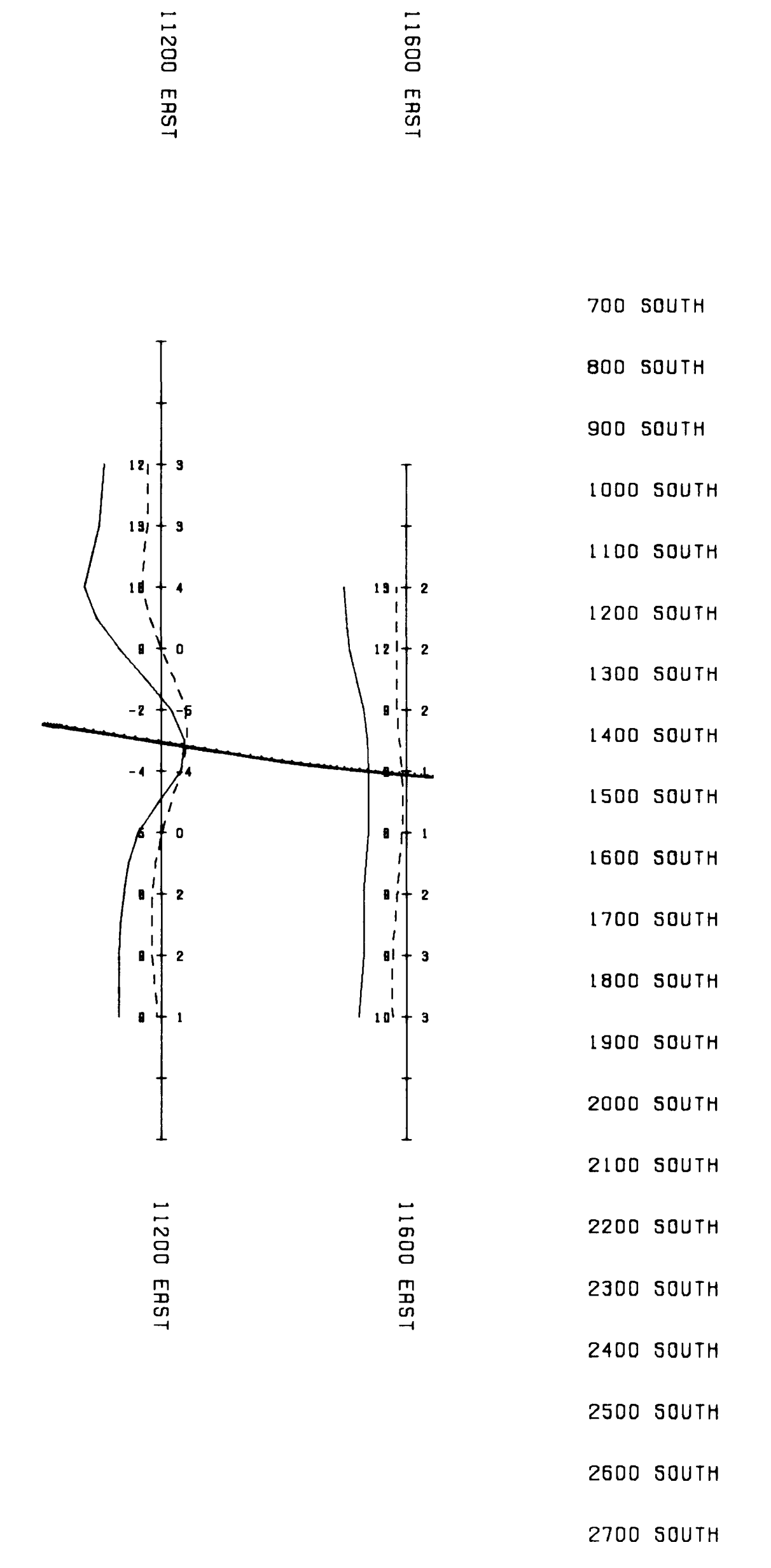
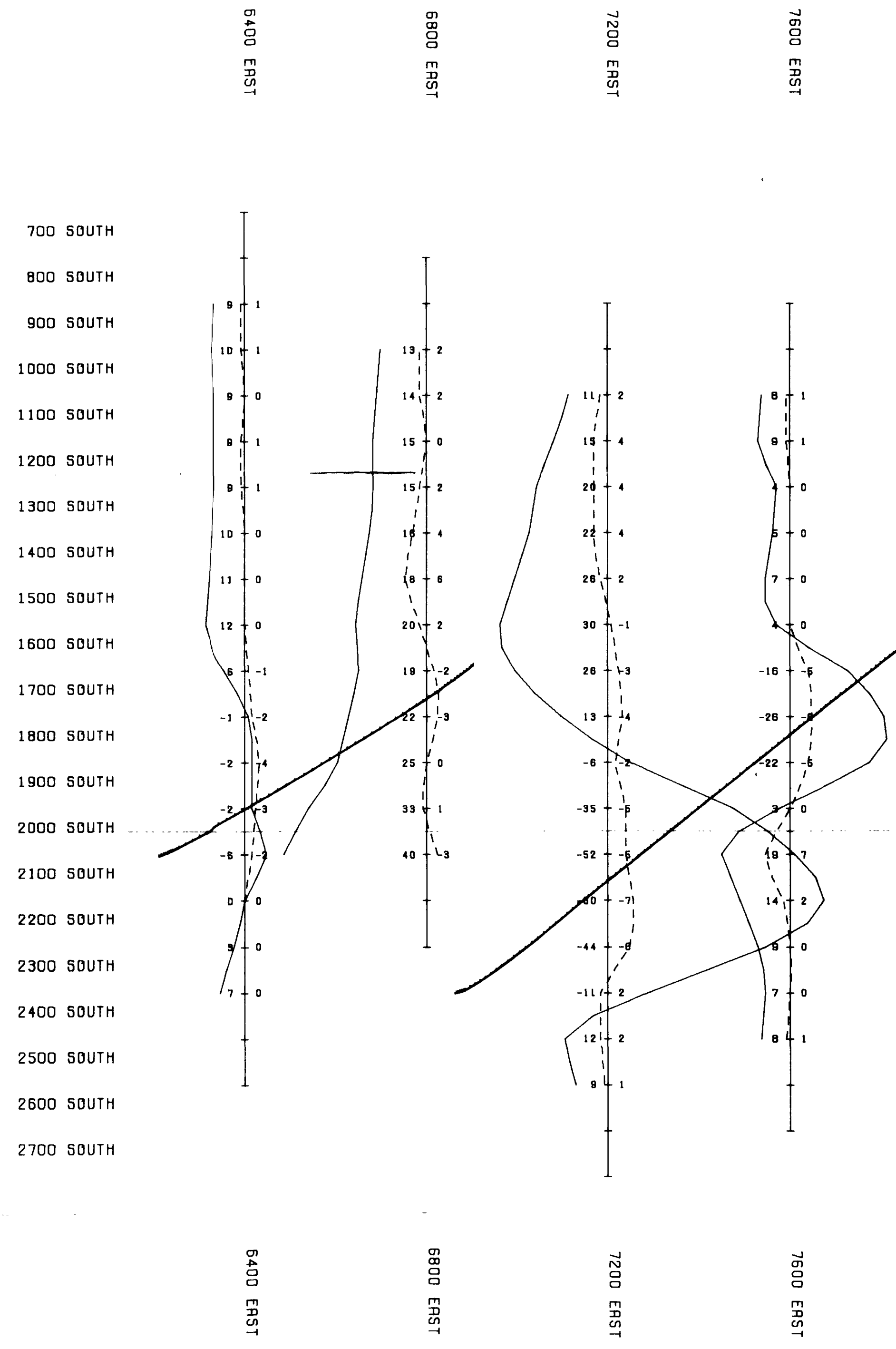
SAMPLE NUMBER	LOCATION	DESCRIPTION	ASSAYS					
			Au	Ag	As	Cu	Zn	Pb
6227	59.5-60.1		129	2		168	2.64%	
6228	60.1-61.3		317	4		188	7.30%	
6229	61.3-62.5		77	4		214	1.74%	
6230	62.5-64.2		134	4		166	8.25%	
6231	64.2-65.4		108	2		98	1.06%	
6232	65.4-66.4		101	2		122	3.42%	
6233	66.4-67.9		51	2		108	1976	
6234	67.9-68.9		119	4		186	4400	
6235	68.9-89.9		921	10		336	6480	
6236	69.9-70.5		134	8		212	2.42%	
6237	70.5-72.1		93	6		296	1.20%	
6238	72.1-73.3		23	4		140	6.45%	
6239	73.3-74.3		136	8		168	1.46%	
6240	74.3-75.8		82	8		100	668	
6241	75.8-77.3		280	24		168	6.35%	
6242	77.3-78.8		132	2		90	3960	
6243	94.3-95.0		111	10		256	5440	
6244	95.0-96.4		130	40		314	6.10%	
6245	96.4-97.3		165	10		134	6920	
6246	97.3-98.2		202	6		130	6.95%	

Durham Geological Services Inc.
P.O. Box 1330
Timmins, Ontario
P4N 7J8

DIAMOND DRILL HOLE LOG

PROJECT: NORON RESOURCES LTD. HOLE NUMBER: H-91-4
AREA: HURDMAN TWP. LOCATION: L76E 1500S
CLAIM NUMBER: P 1156192 AZIMUTH: 183°
CORE SIZE: BQ DIP: -50°
DRILLED BY: NORON DRILLING DATES: December 15, 16 1991
LOGGED BY: BRUCE DURHAM CASING: 18M.
CORE STORED AT: TIMMINS CORE LIBRARY LENGTH: 107M.
OBJECTIVE: TEST Max Min II anomaly
Located at 1750S. DIP TESTS: _____

B. Durham

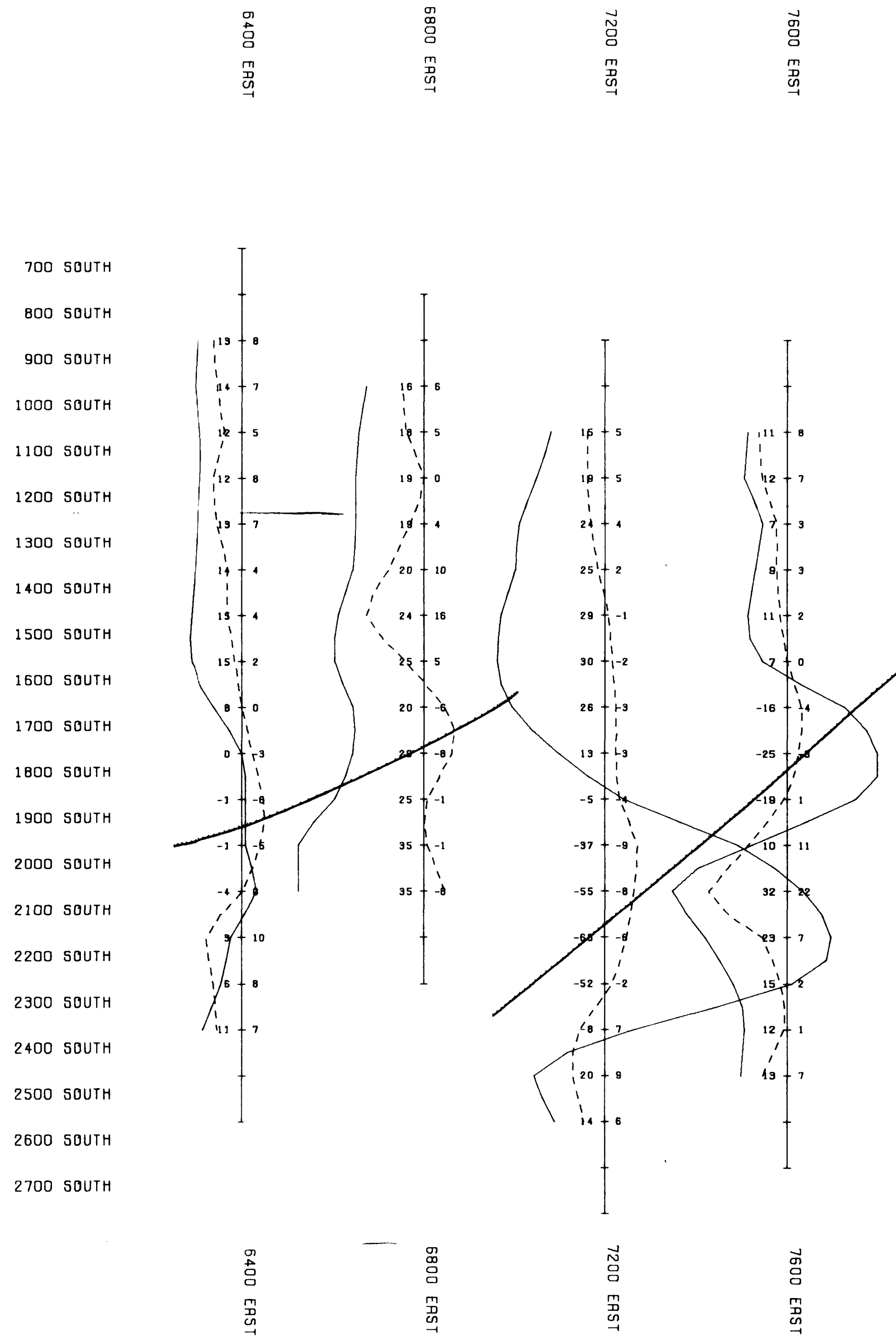


INSTRUMENT: APEX MAX-MIN 11
 MODE: HORIZONTAL CO-PLANER
 COIL SEPARATION: 300 FT.
 FREQUENCY: 444 HZ.
 PROFILE SCALE: 1CM = 10%

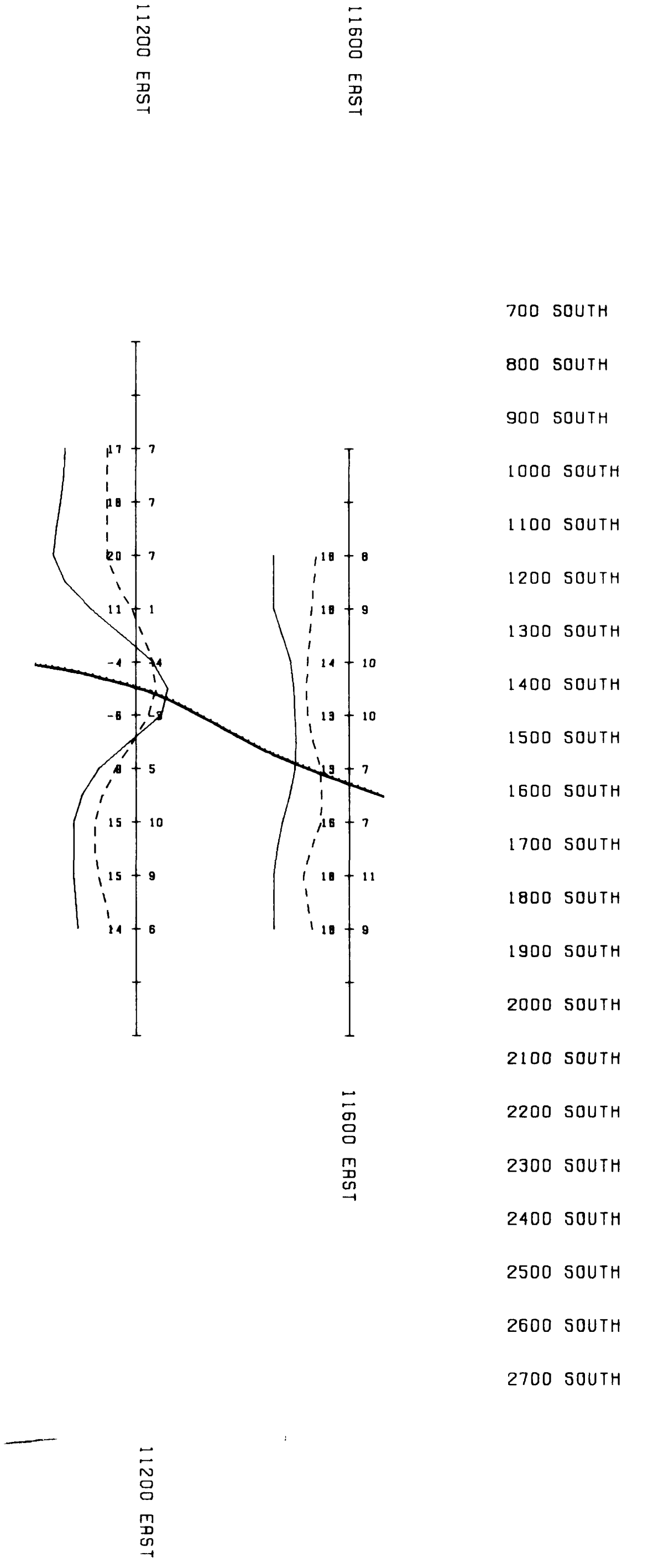
PARAMETERS MEASURED:
 INPHASE (%) LEFT SIDE OF LINE
 QUADRATURE (%) RIGHT SIDE
 POSITIVE Z DIRECTION TO LEFT

Client: NORONT RESOURCES LTD.	
Property: HURDM AN TWP.	
Title: HORIZONTAL LOOP SURVEY 444 HZ.	
Processed: RJM	Checked: RJM
Date: Dec. 1991	Township: HURDM N
Province: ONTARIO	N.T.S.:
Scale: 1"=200 Ft.	Drawing: 444-1





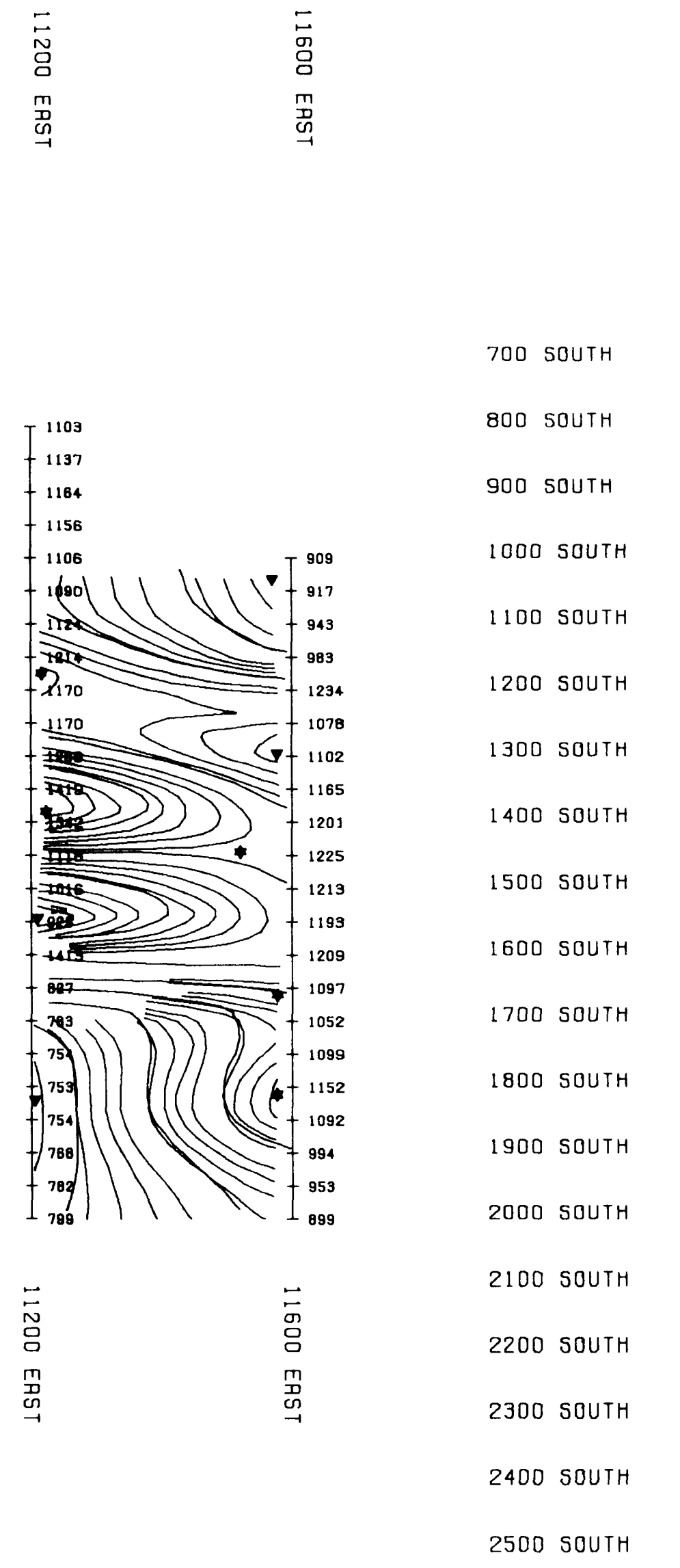
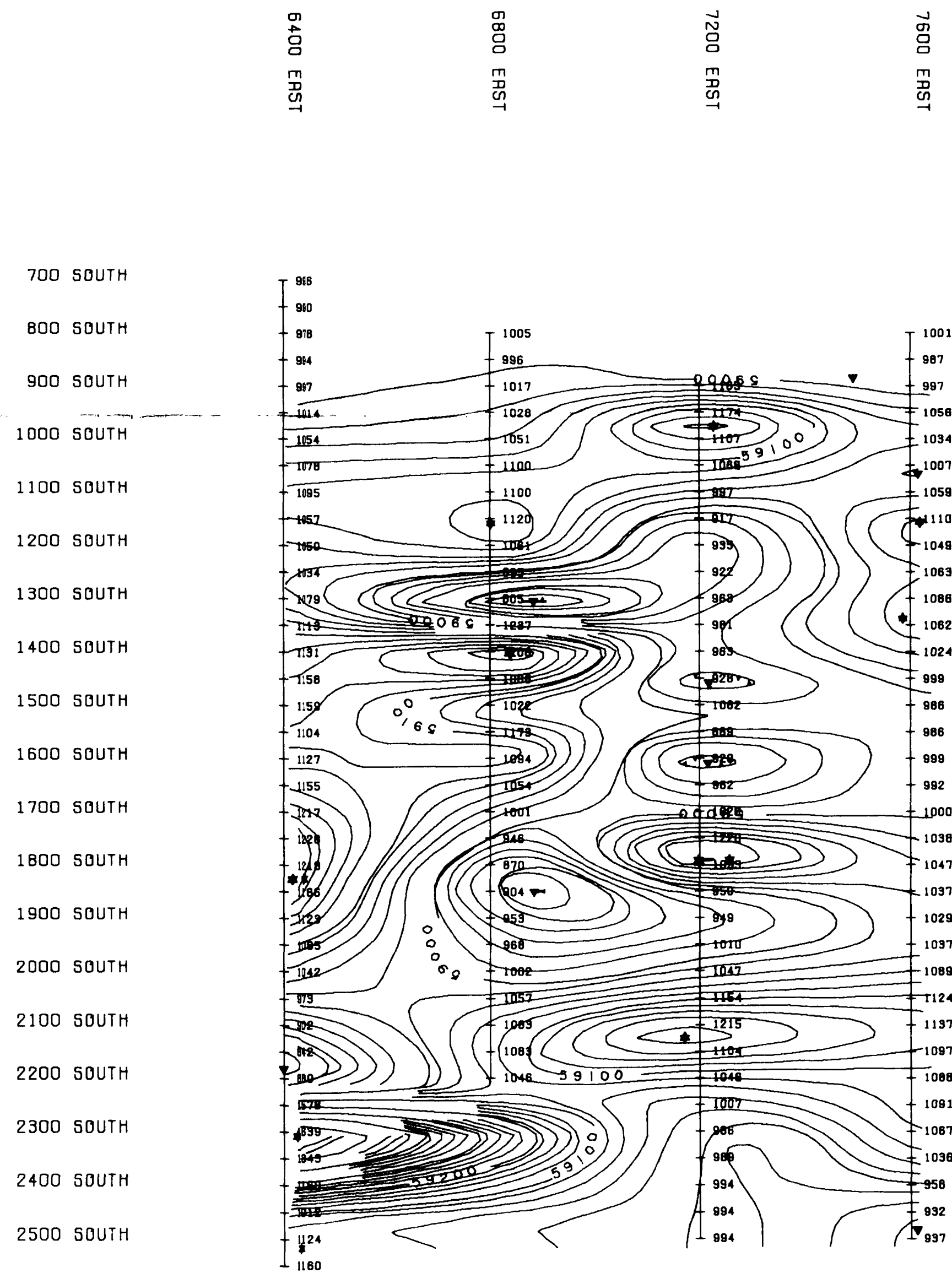
4
TIN



INSTRUMENT: APEX MAX-MIN 11
 MODE: HORIZONTAL CO-PLANER
 COIL SEPARATION: 300 FT.
 FREQUENCY: 1777 HZ.
 PROFILE SCALE: 1CM = 10%
 PARAMETERS MEASURED:
 INPHASE (%) LEFT SIDE OF LINE
 QUADRATURE (%) RIGHT SIDE
 POSITIVE Z DIRECTION TO LEFT

Client: NORONT RESOURCES LTD.	
Property: HURDMAN TWP.	
Title: HORIZONTAL LOOP SURVEY 1777 HZ.	
Processed: RJM	Checked: RJM
Date: Dec. 1991	Township: HURDMAN
Province: ONTARIO	N.T.S.:
Scale: 1"=200 FT.	Drawing: 1777-1





LEGEND:

INSTRUMENT: EDA OMNI IV PROTON PRECESSION MAGNETOMETER
 PARAMETERS MEASURED: EARTH'S TOTAL MAGNETIC FIELD
 DIURNAL CORRECTION METHOD: BASE STATION LOOPING
 NOTE: 50000 NANO-TESLAS SUBTRACTED FROM ALL READINGS
 READING INTERVAL: 50 FEET
 CONTOUR INTERVAL: 25 NANO-TESLAS

Client: NORONT RESOURCES LTD.	
Property: HURDMAN TWP.	
Title: TOTAL FIELD MAGNETIC SURVEY PLAN CONTOURED MAP	
Processed: RJM	Checked: RJM
Date: Dec. 1991	Township: HURDMAN
Province: ONTARIO	N.T.S.:
Scale: 1"=200 FT.	Drawing: MAG-1

