

AP NO:116A/10

ASSESSMENT REPORT: X

DOCUMENT NO: 093230

PROSPECTUS:

MINING DISTRICT: Mayo

CONFIDENTIAL: X

TYPE OF WORK:Geophysics

OPEN FILE:

REPORT FILED UNDER: Inco Exploration and Technical Services Inc.

DATE PERFORMED:July 2 - August 5, 1994

DATE FILED:December 14, 1994

LATITUDE:63 38N

AREA:Hart River

LONGITUDE:136 51W

VALUE:\$38,100

CLAIM NAME AND #:Arm 1-85

WORK DONE BY:SJ Geophysics Ltd.

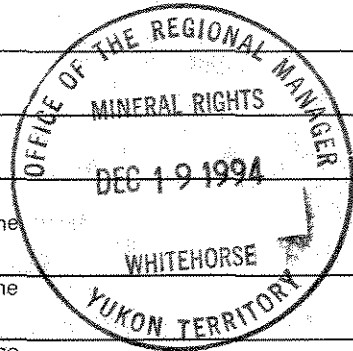
WORK DONE FOR:Inco Exploration and Technical Services Inc.

DATE TO GOOD STANDING	

REMARKS:Horizontal Loop EM and Magnetometer Survey. The work involved 76.6 line-Km of magnetics collected at 12.5 meter spacing, 37.275 line-Km of HLEM at 150 meter coil separation and 1.525 line-Km of HLEM at 100 meter coil separation.

M.R. file no.
 R.M.M.R. file no.
 Date forwarded
14 Dec. 94

TRANSMITTAL FORM



From Mining Recorder at: *Mayo*
 To Regional Manager, Mineral Rights at Whitehorse, Y.T.

For action are:

- NEW APPLICATION FOR PLACER LEASE TO PROSPECT Name
 - RENEWAL APPLICATION PLACER LEASE TO PROSPECT Name Lease no.
 - AFFIDAVIT OF EXPENDITURE ON PLACER LEASE Name Lease no.
 - SECURITY DEPOSIT
 - FINANCIAL ABILITY
 - ASSIGNMENT OF PLACER LEASE NO. From To
 - GROUPING APPLICATION UNDER SEC. 52(2) PLACER MINING ACT. Owner
 - DIAMOND DRILL LOGS Claims Claim sheet no.
 - QUARTZ ASSESSMENT REPORT Claims Claim sheet no.
- Arm 1-40; 41-44; 45-85*
- Type of report: *Horizontal Loop EM / Magnetometer Survey* Submitted by: *Inco Exploration + Technical Services Inc.*
- Cls. work performed on: *Survey* \$ req. for ren. application: *38,100.00*

Please return one copy of numbered report and index card for our files. Thank you.

J. Helan
 Signature

Date returned

REPLY ACTION

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Signature



093230

GEOPHYSICAL REPORT ON THE

HART RIVER PROJECT

MAYO MINING DISTRICT, YUKON

N.T.S. 116A/10

**HORIZONTAL LOOP EM
AND
MAGNETOMETER
SURVEY**

ON THE

**HART RIVER
PROPERTY**

**OGILVIE MOUNTAINS - N.T.S. 116A/10
LATITUDE 64°38'N LONGITUDE 136°51'W**

Work Period: July 2 - August 5, 1994

Claims:

Arm 1-40 (YB29400-YB29439)

Arm 41-44(YB22481-YB22484)

Arm 45-85(YB43065-YB43105)

**FOR
INCO EXPLORATION AND TECHNICAL
SERVICES INC.**

**BY
SJ GEOPHYSICS LTD.**

November 1994

Report By
Syd Visser

TABLE OF CONTENTS

INTRODUCTION.....	1
LOCATION AND ACCESS.....	1
PREVIOUS WORK	1
PROPERTY STATUS.....	2
REGIONAL GEOLOGY.....	2
FIELD WORK AND EQUIPMENT.....	3
DATA PRESENTATION.....	4
DISCUSSION	5
MAGNETIC	5
HLEM.....	5
<i>Conductors 1 to 5</i>	5
<i>Conductor 6 and 7</i>	6
<i>Conductors 8,9, and 10</i>	6
<i>Conductor 11</i>	7
CONCLUSIONS	7
REFERENCES.....	8
APPENDIX 1	9
STATEMENT OF EXPENDITURES	9
APPENDIX 2	10
STATEMENT OF QUALIFICATIONS.....	10

INTRODUCTION

A horizontal loop EM (HLEM) and magnetometer survey was completed for Inco Exploration and Technical Services Inc. on the Hart River Project by SJ Geophysics Ltd. during the period of July 25 to August 5, 1994. Line cutting was completed between July 25 by Aurum Geological Consultants Inc.

The purpose of the survey was to detail and extend an electromagnetic (EM-37) and magnetic survey performed in 1993 by Inco.

This report covers the 1994 geophysical work and the line cutting that is to be assessed against the Arm 1-85 claims which form part of the Hart River project claim group.

LOCATION AND ACCESS

The Hart River property is located at latitude 64° 38' N and longitude 136° 51' W on Mark Creek, a northerly flowing tributary of Hart River. The property is 140 kilometres northeast of Dawson City and 120 kilometres northwest of Mayo in the Ogilvie Mountains (Figures 1 and 2).

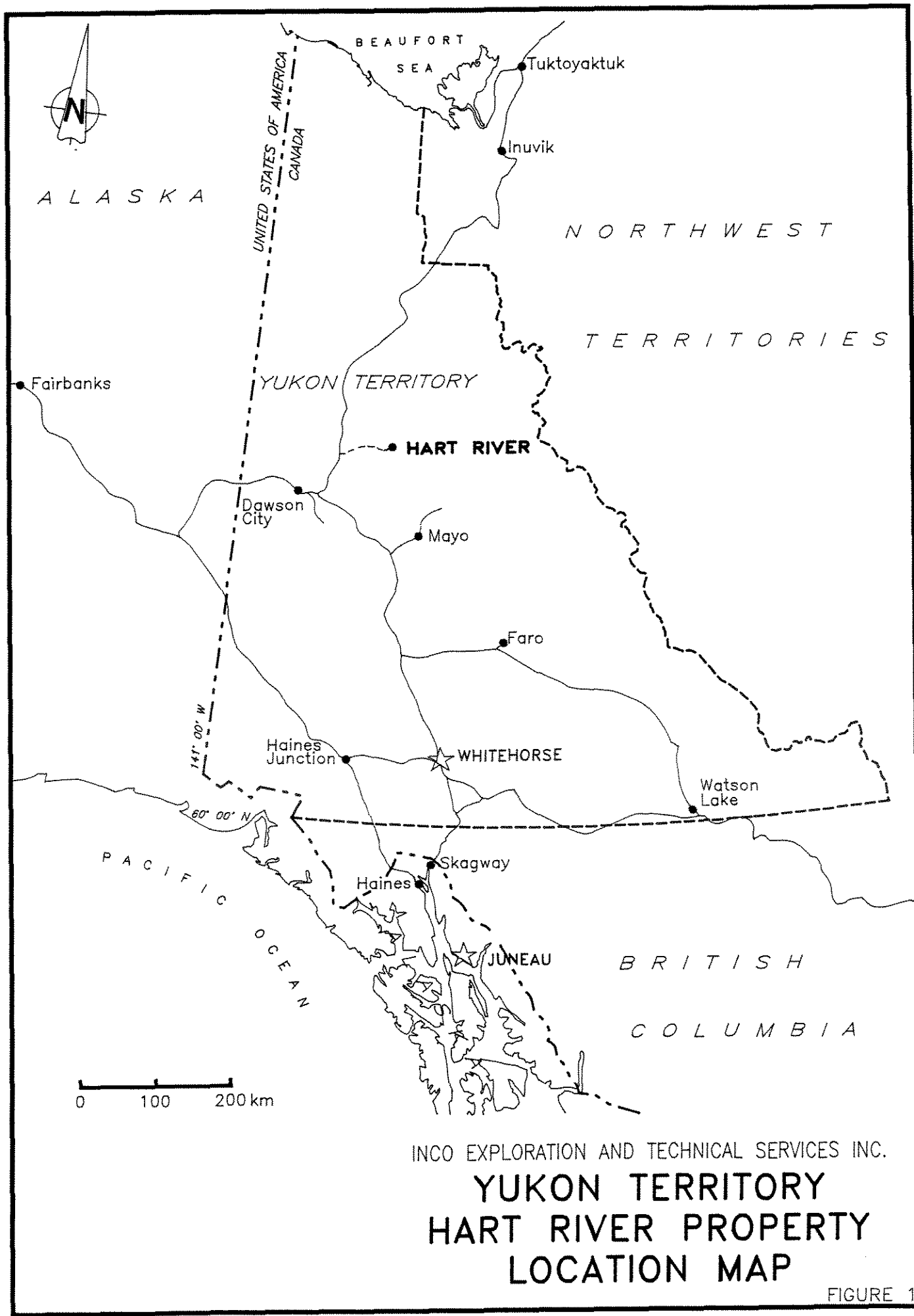
The property is accessible by helicopter or by small fixed-wing aircraft to a gravel airstrip with a maximum useable length of 500 metres. The airstrip was used regularly by a Cessna 206 and several mob-demobe trips were also made by Single Otter and Pilatus Porter aircraft. Take off payload is limited to about half of the normal limit due to the elevation and length of the airstrip.

Adequate water is available in Mark Creek for the camp and drill. A ten person tent camp was constructed along the east side of the airstrip.

PREVIOUS WORK

Inco Limited (Inco) staked 40 Arm claims in November 1992 to cover favourable stratigraphy adjacent to the Mark and Core claims held by Calypso Development Ltd. (Calypso). Calypso's property covers the Mark deposit (about 500,00 tons grading 3.65% Zn, 0.87% Pb, 1.45% Cu, 1.45 oz/ton Ag and 0.04 oz/ton Au). On January 2, 1993, Inco and Calypso entered into an agreement which grants Inco an option to purchase the Mark and Core claim group.

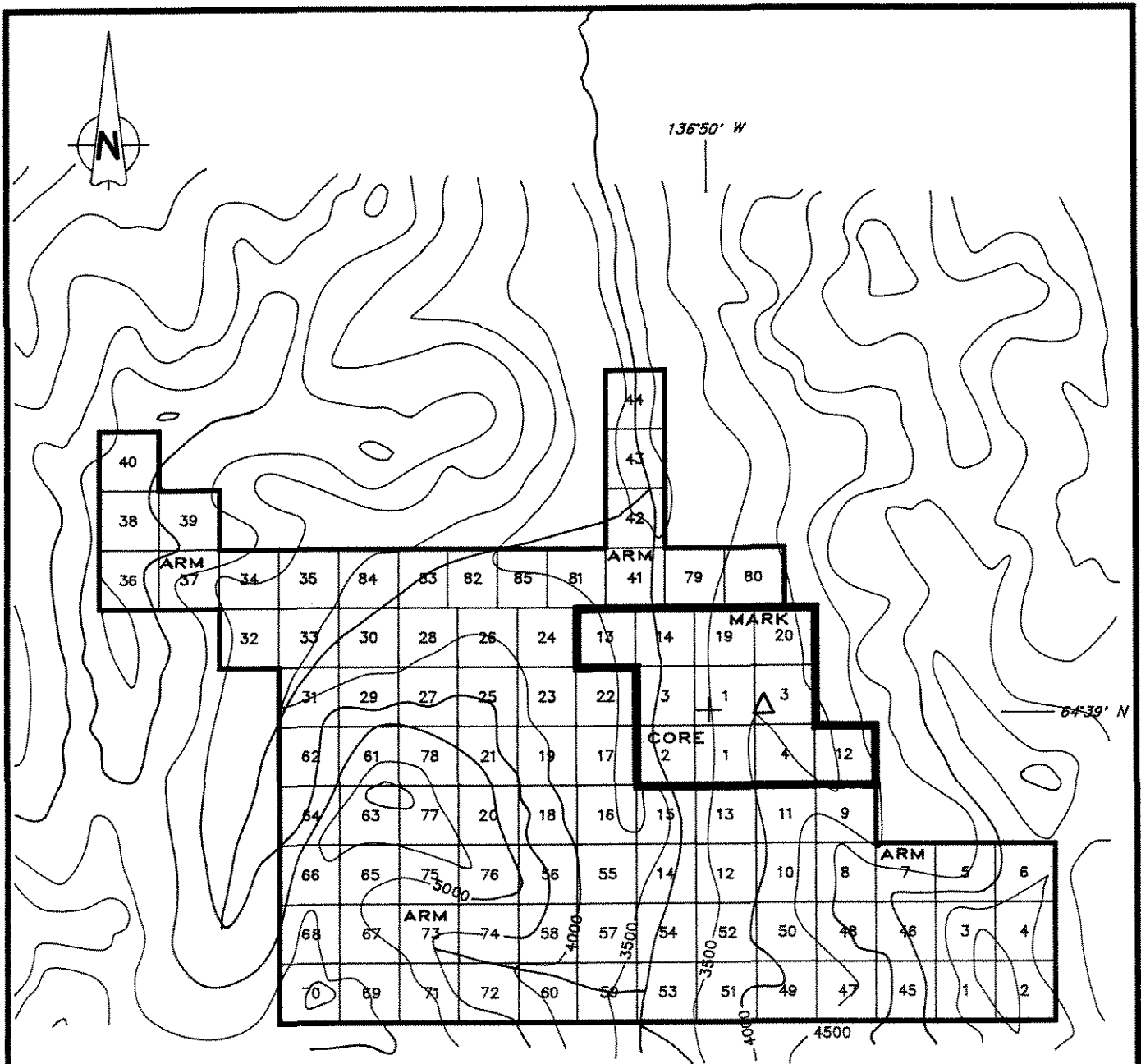
During the summer of 1993, Inco conducted electromagnetic (EM-37) and magnetic surveys, surface mapping/sampling and a 5-hole diamond drill program totalling






INCO EXPLORATION AND TECHNICAL SERVICES INC.
**YUKON TERRITORY
 HART RIVER PROPERTY
 LOCATION MAP**

FIGURE 1

HAR003



LEGEND

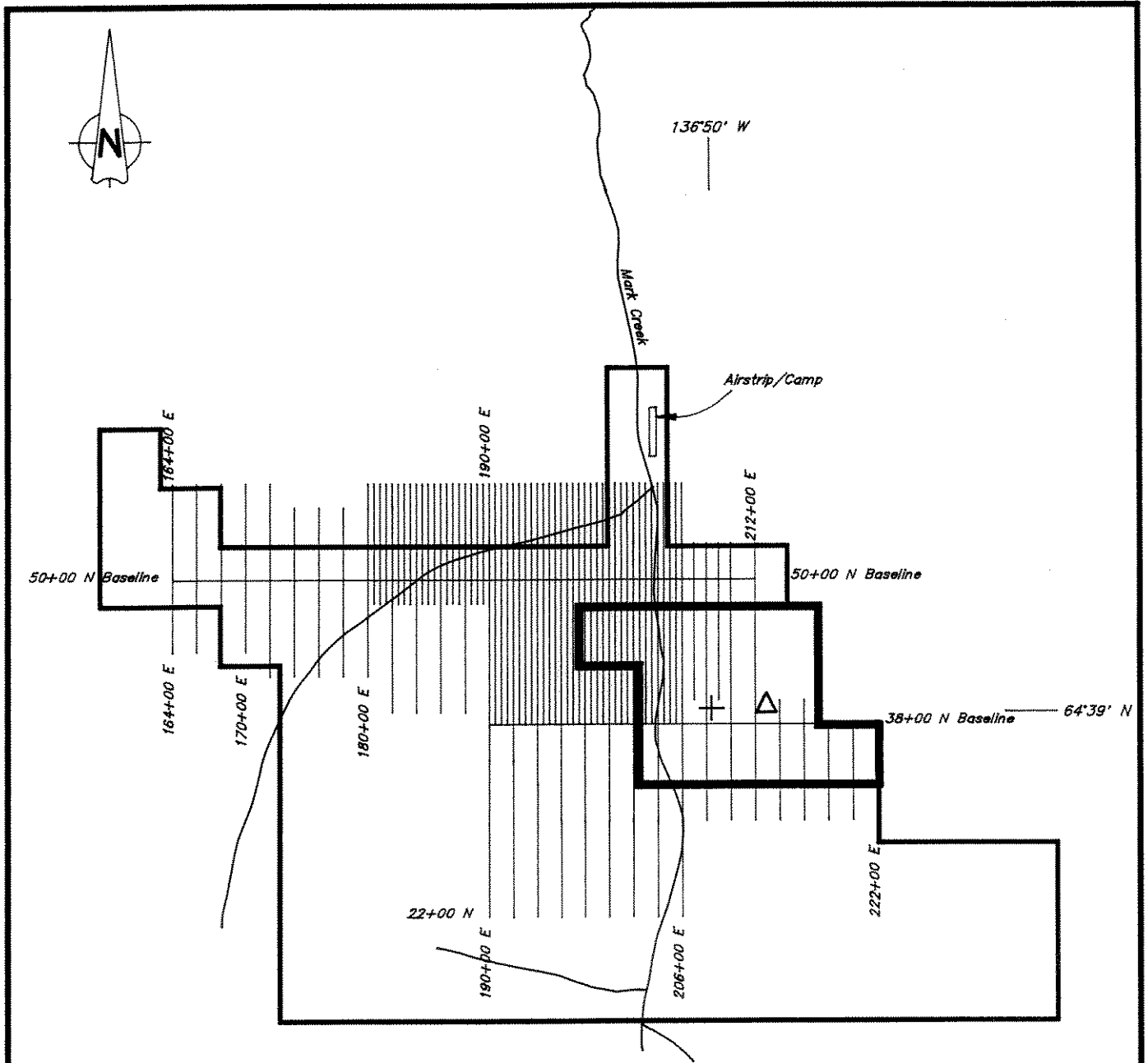
-  PROPERTY OUTLINE - OPTIONED BY INCO
-  PROPERTY OUTLINE - STAKED BY INCO
-  HART RIVER DEPOSIT (MARK DEPOSIT)

0 1 2 Km





INCO EXPLORATION AND TECHNICAL SERVICES INC.
YUKON TERRITORY
HART RIVER PROJECT
CLAIM MAP

FIGURE 2

HAR007



LEGEND

-  PROPERTY OUTLINE - OPTIONED BY INCO
-  PROPERTY OUTLINE - STAKED BY INCO
-  HART RIVER DEPOSIT (MARK DEPOSIT)
-  GRID LINES



INCO EXPLORATION AND TECHNICAL SERVICES INC.
YUKON TERRITORY
HART RIVER PROJECT
GRID AND PROPERTY MAP

FIGURE 3

HAR007

1,556.1 metres. Four additional claims (Arm 41-44) were staked in August, 1993. The Arm 45 - 85 claims were staked in July 1994.

PROPERTY STATUS

The property consists of 96 claims and the entire claim group is wholly owned by Inco Limited (Figure 2). Pending the acceptance of this report, Arm 45 - 85 claims will be in good standing until 2000 and Arm 1 - 40 until 2002 and Arm 41 - 44 until 2003.

Name	Claim Number	Expiry Year
Arm 1 - 40	YB29400 - YB29439	2002
Arm 41 - 44	YB22481 - YB22484	2003
Arm 45 - 85	YB43065 - YB43105	2000

This report refers specifically to the 1994 geophysical work done on the entire claim group (Figure 3); however, assessment credit will be only filed against the Arm 1 - 85 claims.

REGIONAL GEOLOGY

The regional geology of the Hart River area is described in Open File 1992-2 (Abbott and Roots, 1992). In this portion of the Ogilvie Mountains, an east-southeast trending sequence of Proterozoic rocks is exposed in a window surrounded by much younger rocks of Lower Paleozoic age. The lenticular window is about 80 km long and 32 km wide, and exposes three Proterozoic rock packages separated by angular unconformities: the Windermere Supergroup, the Fifteen Mile Group, and the Wernecke Supergroup. A gabbro/diorite sill complex intrudes the Wernecke Supergroup assemblage.

The Wernecke Supergroup consists of the Quartet Group of shale, siltstone and sandstone up to 2400 metres thick that is overlain by the Gillespie Lake Group of dolomite, argillite, and basalt. The Gillespie Lake Group consists predominantly of dolomite, but locally on the Hart River property it also includes argillite with intercalated mafic sills and tuff. The argillite-volcanic package is about 600 metres thick and is the host of the Hart River massive sulphide deposits (Mark deposit). Overlying the argillite-volcanic succession is more dolomite.

FIELD WORK AND EQUIPMENT

The geophysical field work was performed by SJ Geophysics Ltd.. Inco provided all the logistical support (including camp, transportation, expediting, etc.). All the magnetic data for a total of 76.6 line-Km was collected at 12.5m station spacing. 37.275 line-Km of HLEM with a 150m coil separation and 1.525 line-km of with a 100m coil separation was collected at a 25m station spacing.

The grid consisted of flagged lines with picketed stations. The lines were cut, where necessary, to align pickets. The brush was not cleared from the lines and lines were not cut to geophysical standard. The poorly cut lines slowed the HLEM survey by approximately 30% and the magnetic survey by approximately 10% on half the grid. The remainder of the survey grid was above the tree line or the valley bottom with short buckbrush. The poorly cut lines also prevented accurately measurement of the cable length for the HLEM survey and was the cause of a number of breaks of a new cable.

The magnetic equipment used consisted of two EDA Omni Plus and one Omni-IV proton precession field and base magnetometers. The base station was located on or near the property to provide local corrections for diurnal drift. The magnetic data was corrected for diurnal at the end of each survey day.

The EM equipment used was a APEX MAX-MIN 1-10 horizontal loop EM systems with MMC data loggers. A 150m coil separation was used for the survey and the data from three frequencies (440, 1760 and 3520Hz) were recorded. Two short lines were surveyed using a 100m coil separation.

All the data was transferred to an computer and plotted using Geopak Systems software. Field plots were generated and field interpretation was provided by the geophysicist on site and presented to the project geologist Dennis Bohme.

The magnetic survey overlapped with some of the previous data to calculate a common base with both data sets. The magnetic data from both years were corrected and joined into a common data base for plotting.

DATA PRESENTATION

The magnetic data was plotted as contours and colour map. The inphase and quadrature of each HLEM frequency was plotted as profiles on separate maps. A compilation map of the magnetics and HLEM is also included. The data was also presented to the client as ASCII data on an IBM format disk along with field plots generated on a dot matrix printer.

The following is a list of the plates accompanying this report:

Plate G1A	TOTAL FIELD MAGNETOMETER CONTOURS	In Pocket
Plate G1B	TOTAL FIELD MAGNETOMETER COLOUR CONTOURS (not included in assessment report)	
Plate G2A	HORIZONTAL LOOP EM PROFILES 440HZ (150m cable)	In Pocket
Plate G2B	HORIZONTAL LOOP EM PROFILES 1760HZ (150m cable)	In Pocket
Plate G2C	HORIZONTAL LOOP EM PROFILES 3520HZ (150m cable)	In Pocket
Plate G3A	HORIZONTAL LOOP EM PROFILES 440HZ (100m cable)	In Pocket
Plate G3B	HORIZONTAL LOOP EM PROFILES 1760HZ (100m cable)	In Pocket
Plate G3C	HORIZONTAL LOOP EM PROFILES 3520HZ (100m cable)	In Pocket
Plate G4A	HLEM COMPILATION MAP	In Pocket
Plate G4B	HLEM COMPILATION MAP MAGNETIC COLOUR CONTOURS (not included in assessment report)	

DISCUSSION

MAGNETIC

The magnetic data from last years survey was combined with this years survey for plotting and interpretation. Since the writer does not have any knowledge of the local geology the magnetic data will not be discussed in detail.

The magnetic variation over the grid is approximately 600nT in total due mainly to a number of local highs and lows. The majority of the survey area has a variation of approximately 200nT.

The most striking part of the magnetic survey is the apparent fold axes outlined by a weak magnetic high in the east central part of the survey area. The second major feature is the weak magnetic high linear striking across the survey area in the northern part of the grid. Both of these zones show up extremely well on the colour and contour maps (plates G1A and G1B) therefore were not outlined on the compilation map. The compilation of the HLEM data was plotted on part of the colour magnetic map (plate G4B) to show the relationship of the HLEM conductors to the magnetic data.

HLEM

The conductor axis, of which 11 were recorded, interpreted from the HLEM data at two frequencies, 440 and 3520Hz, are shown on the compilation map G4A and G4B. The 440Hz shows the good conductors and the 3520Hz traces the poor conductive zones and includes any good conductors. It appears that the best conductors, interpreted from the 440Hz data, have a conductivity of 5 to 15mhos and are at a depth of 5 to 25m. The weaker conductors interpreted from the 3520Hz data are lower than 5mhos and appear to be shallower and in most cases wider. The 11 conductors can be grouped into 4 separate zones

Conductors 1 to 5

Conductors 1 to 5 are a group of good anomalies located around the nose of a fold, in the central part of the survey grid, outlined by a magnetic high.

Conductor 1 is located on the southern magnetic high limb of the fold, starting at line 19700E and extending to the west. The western part of the anomaly extend, west to line 19100E past the western end of the magnetic high where it decreases in conductivity.

Conductor 2 is similar to conductor one and may be an offset eastern continuation of anomaly 1.

Conductor 3 is a one line anomaly in the central part of the fold and appears to be associated with a local magnetic low which may be a dipole effect from a mag high to the east.

Conductor 4 is located on the northern magnetic high limb and is similar to conductor 1. This conductor also extends to the west of the magnetic high where it weakens considerably in conductivity.

Conductor 5 is located to the north of the magnetic high in a linear magnetically low area.

Both conductors 4 and 5 appear to be wider at the high frequencies suggesting a wider weakly mineralized zone extending beyond a good conductive core.

The eastern ends of conductors 1,4 and 5 all appears to end at a common point at the west end of the survey area.

Conductors 2,3,4,and 5 are all open to the east and the grid should be extended in this area.

Although interpretation is hampered by the proximity of the multiple conductors the conductivity of the above conductors appear to vary from a high of 10-15 mhos (440 Hz anomalous areas) to a fraction of a mho (3520 Hz anomalous area). The depth to the top of the good conductors are approximately 20 to 35m. The high amplitude of the high frequency anomalies suggests the currents are shallower at this frequency. This may indicate a weathered or frost broken zone closer to surface.

Conductor 6 and 7

Conductor 6 and the weaker anomaly 7 strike across the northern part of the survey area and are open both to the west and the east. These anomalies are located directly south of a narrow linear magnetic high. The conductivity of conductor 6 is approximately 5-10mhos and appears to vary in depth of 25-30m on the eastern part to 5-10m on the westerns end.

Conductor 7 is a weaker anomaly located to the north of conductor 6 on the eastern end and appears to merge with this conductor in the central part of the survey area.

Conductors 8,9, and 10

Conductor 8 is a short strike length anomaly located to the north of the eastern end of conductor 7. The conductivity of this anomaly in the central part is approximately 5-10mhos with a depth to top of approximately 15m.

Conductors 9 and 10 are very weak and are located approximately on strike with conductor 8. There is no clear magnetic relationship with these conductors.

Conductor 11

Conductor 11 is a very weak anomaly located on the southern part of the survey area. This anomaly is associated with a weak linear magnetic low.

CONCLUSIONS

An apparent fold is clearly outlined by a magnetic high in the central part of the survey area. This magnetic high and the northern magnetic low appear to be associated with relatively strong HLEM conductors.

A linear magnetic high striking across the northern part of the grid is directly north of an relatively good HLEM conductor.


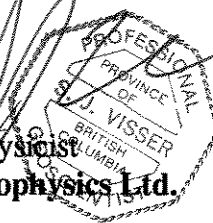
There is an short strike length HLEM conductor with no apparent magnetic signature located on the northern part of the grid.

The weak HLEM anomaly striking across the southern most part of the survey area is associated with a weak magnetic low.

The significance and association of the magnetic anomalies and HLEM conductors is not known to the writer since no geological information was made available to the writer for this interpretation.

Syd Visser, P. Geo

24 November, 1994


Geophysicist
SJ Geophysics Ltd.


REFERENCES

Abbott, J.G., 1993, Revised stratigraphy and new exploration targets in the Hart River area, southeastern Ogilvie Mountains, in Yukon Exploration and Geology, 1992, Exploration and Geological Services Division, Indian and Northern Affairs Canada, pp. 13-23.

Abbott, J.G. and Roots, C., 1992, Geological map of part of map sheets 116 A/10 and 116 A/11, Indian and Northern Affairs Canada, Exploration and Geological Services Division, Yukon Region, Open File 1992-2, 1:50,000 scale.

APPENDIX 1

STATEMENT OF EXPENDITURES

Hart river Project

The project expenditures, with the exception of the geophysics, were provided by Inco to the writer and to the best of my knowledge they are correct.

Personnel

Project Geologist	July 2 - August 5, 94	
D. Bohme	3 days @ \$350/day	\$1,050

Line Cutting

Aurum Geological	July 2 - July 25, 94	
Consultants Inc.	75.0 line-km @ \$180/km	\$13,500

Geophysics

SJ Geophysics Ltd.	July 25 - August 5, 94	
Magnetic Survey	76.6 line-km @ \$115	\$8,809
MaxMin Survey	38.8 line-km @ \$325	12,610
Consulting/Report		<u>8,580</u>
& mob/demobe		\$29,999

Transportation

Cessna 206	14 hours @ \$200/hr	\$2,800
Fixed Wing	includes fuel	

Miscellaneous

Camp Equipment & Cook		\$8,005
Food Costs	80 person days @ \$35/d	2,800
Communications, reproductions		<u>109</u>
		<u>\$10,914</u>

Total		\$58,263
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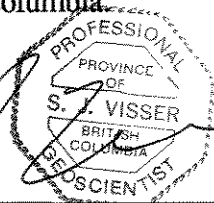
APPENDIX 2

STATEMENT OF QUALIFICATIONS

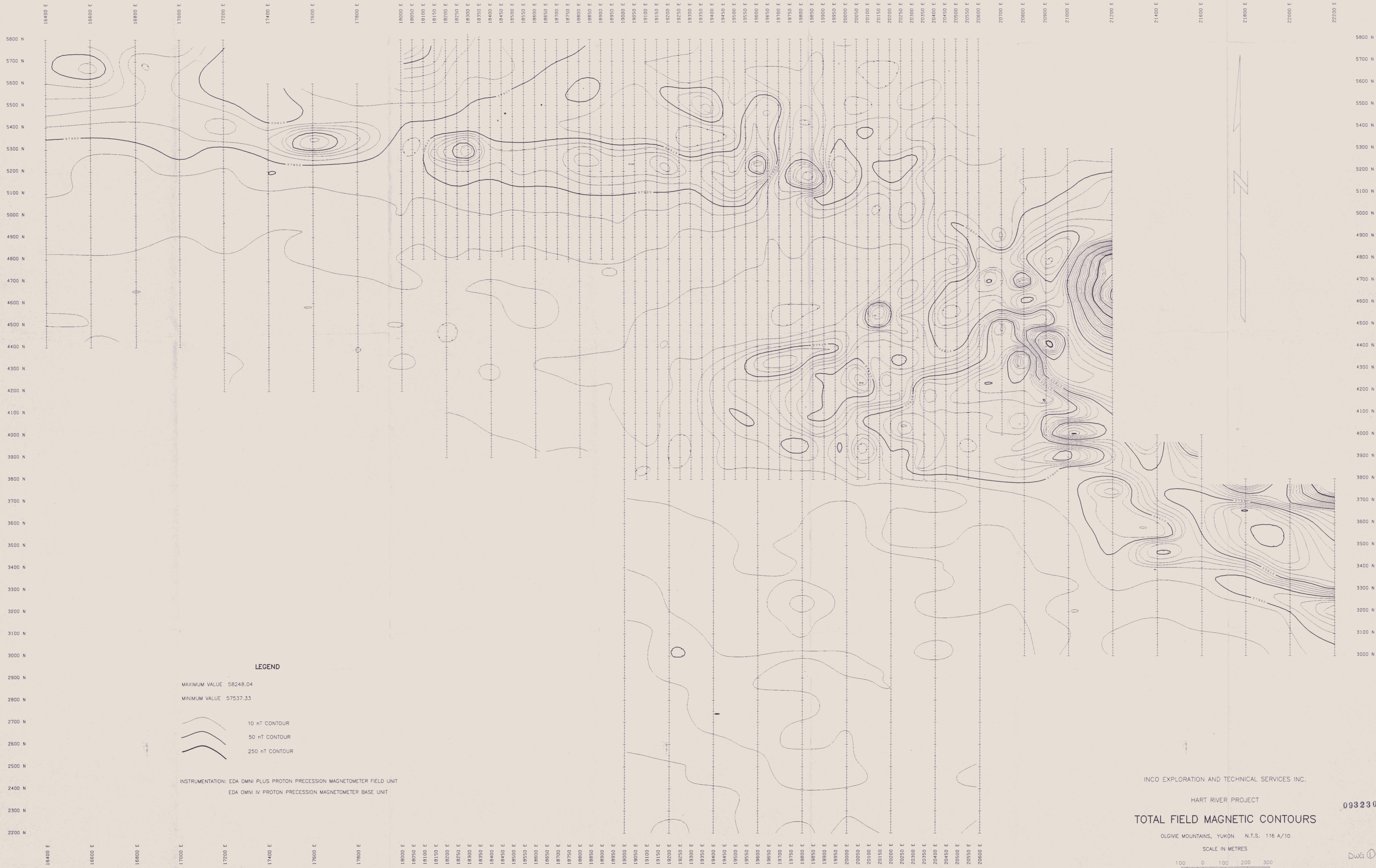
I, Syd J. Visser, of 11762 - 94th Avenue, Delta, British Columbia, hereby certify that,

- 1) I am a graduate from the University of British Columbia, 1981, where I obtained a B.Sc. (Hon.) Degree in Geology and Geophysics.
- 2) I am a graduate from Haileybury School of Mines, 1971.
- 3) I have been engaged in mining exploration since 1968.
- 4) I am a professional Geoscientist registered in British Columbia

24 November, 1994



Syd J. Visser, B.Sc., P. Geo
Geophysicist



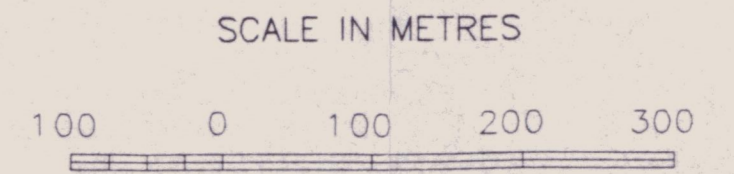
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 MINIMUM VALUE 57537.33

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 50 nT CONTOUR
 250 nT CONTOUR

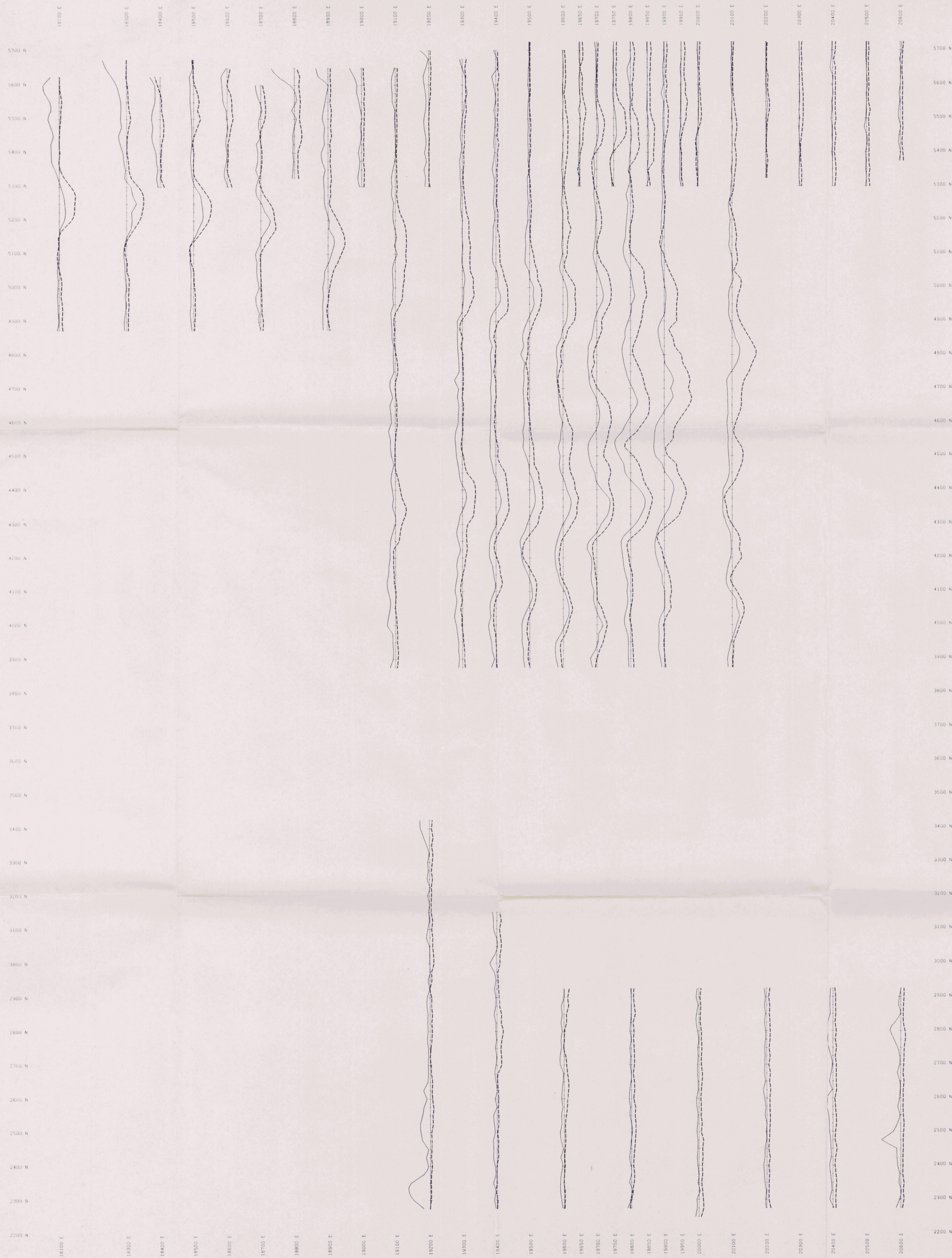
INSTRUMENTATION: EDA OMNI PLUS PROTON PRECESSION MAGNETOMETER FIELD UNIT
 EDA OMNI IV PROTON PRECESSION MAGNETOMETER BASE UNIT

INCO EXPLORATION AND TECHNICAL SERVICES INC.
 HART RIVER PROJECT
TOTAL FIELD MAGNETIC CONTOURS
 OLGIVE MOUNTAINS, YUKON N.T.S. 116 A/10



093230

Dwg 1



LEGEND

PROFILES ARE POSITIVE TO LEFT
 DASHED LINES ARE QUADRATURE
 SOLID LINES ARE IN-PHASE
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 COIL SEPARATION = 150 METRES

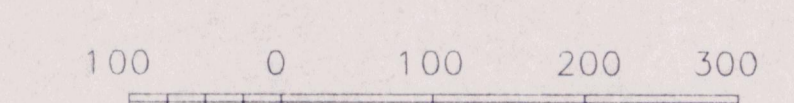
INCO EXPLORATION AND TECHNICAL SERVICES INC.

HART RIVER PROJECT **093230**

HORIZONTAL LOOP EM PROFILES 440 Hz

OLGIVIE MOUNTAINS, YUKON N.T.S. 116 A/10

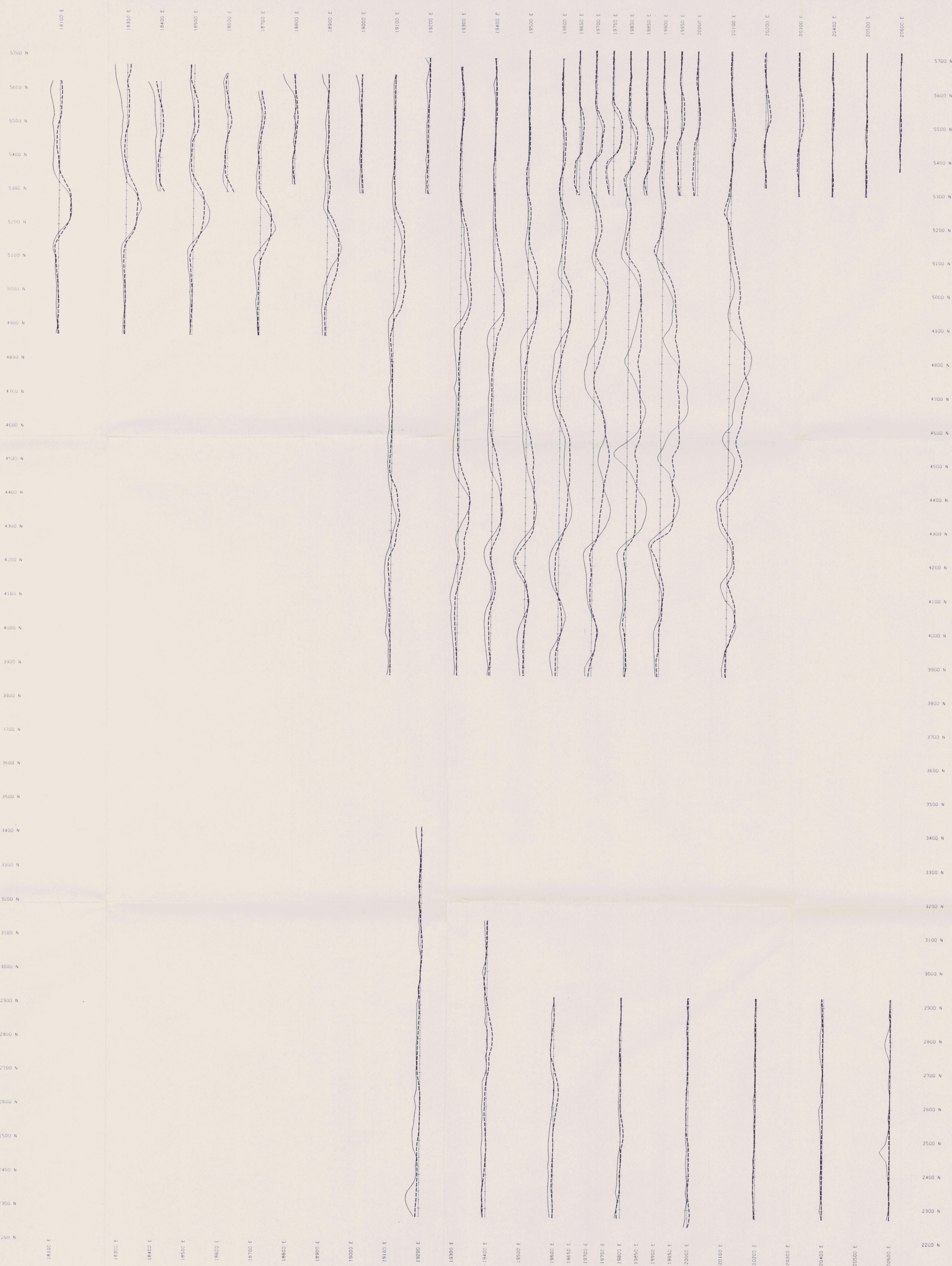
SCALE IN METRES



Dwg (2)

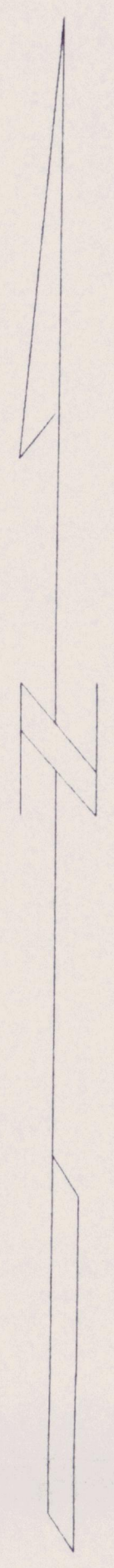
JULY 1994

PLATE G2a



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 COIL SEPARATION = 150 METRES



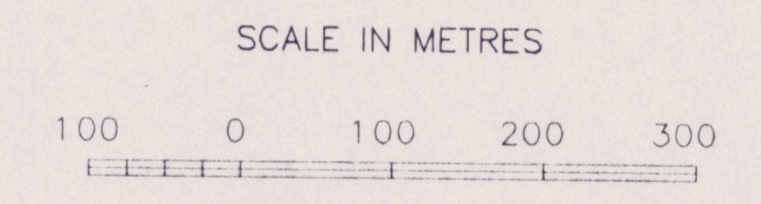
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INCO EXPLORATION AND TECHNICAL SERVICES INC.

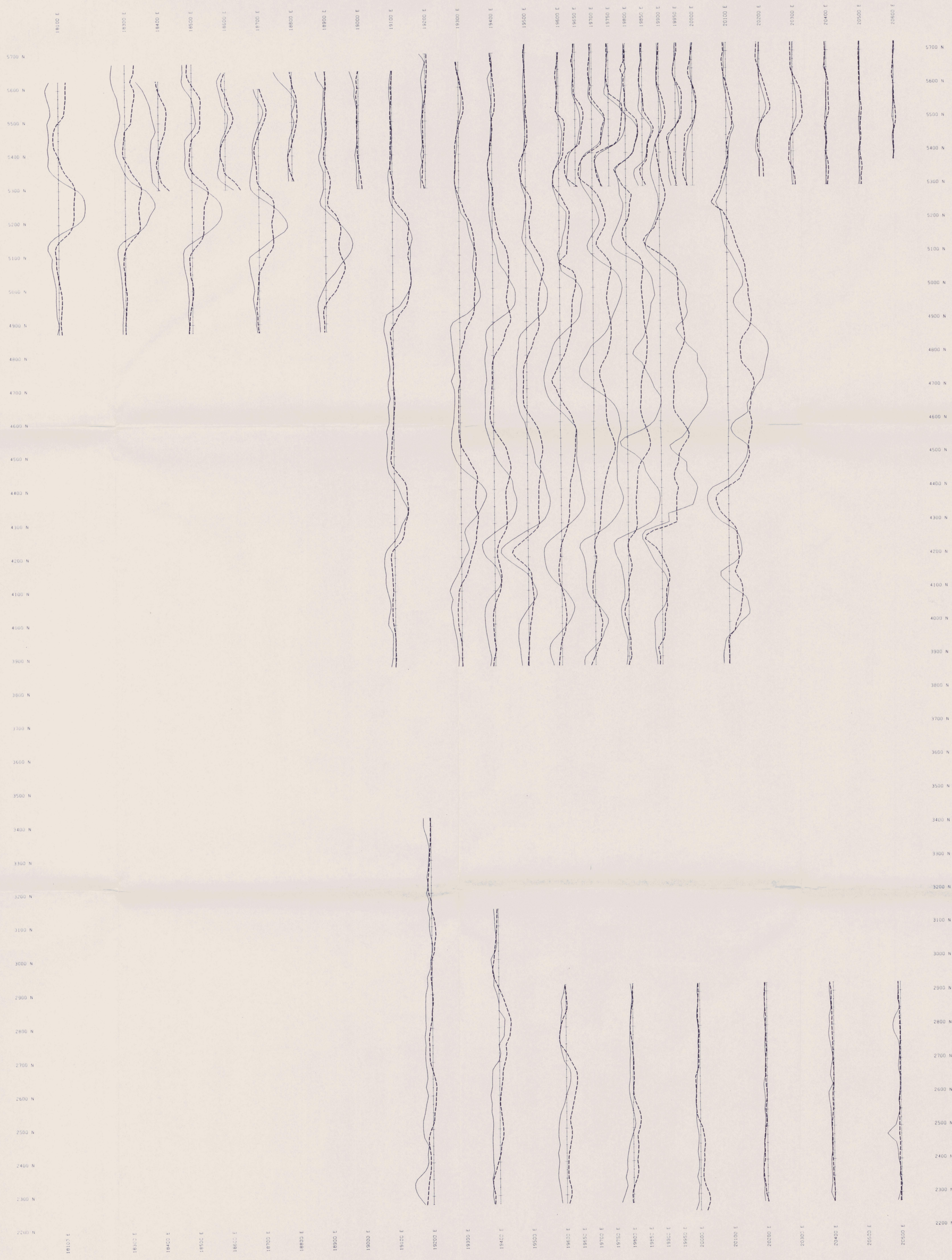
HART RIVER PROJECT

HORIZONTAL LOOP EM PROFILES 1760 Hz

OLGIVE MOUNTAINS, YUKON N.T.S. 116 A/10

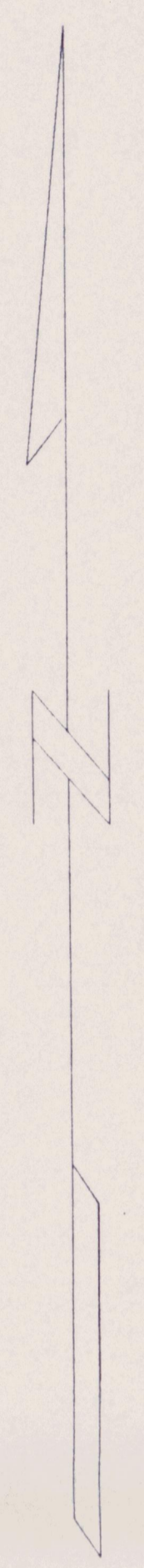


DW4 ③



LEGEND

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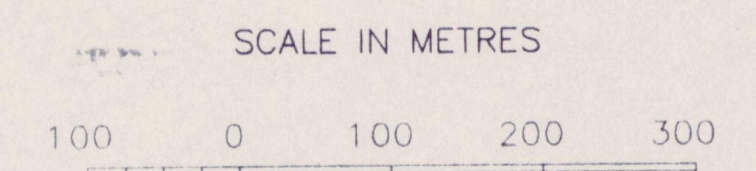


INCO EXPLORATION AND TECHNICAL SERVICES INC.

HART RIVER PROJECT

HORIZONTAL LOOP EM PROFILES 3520 Hz

OLGIVE MOUNTAINS, YUKON N.T.S. 116 A/10

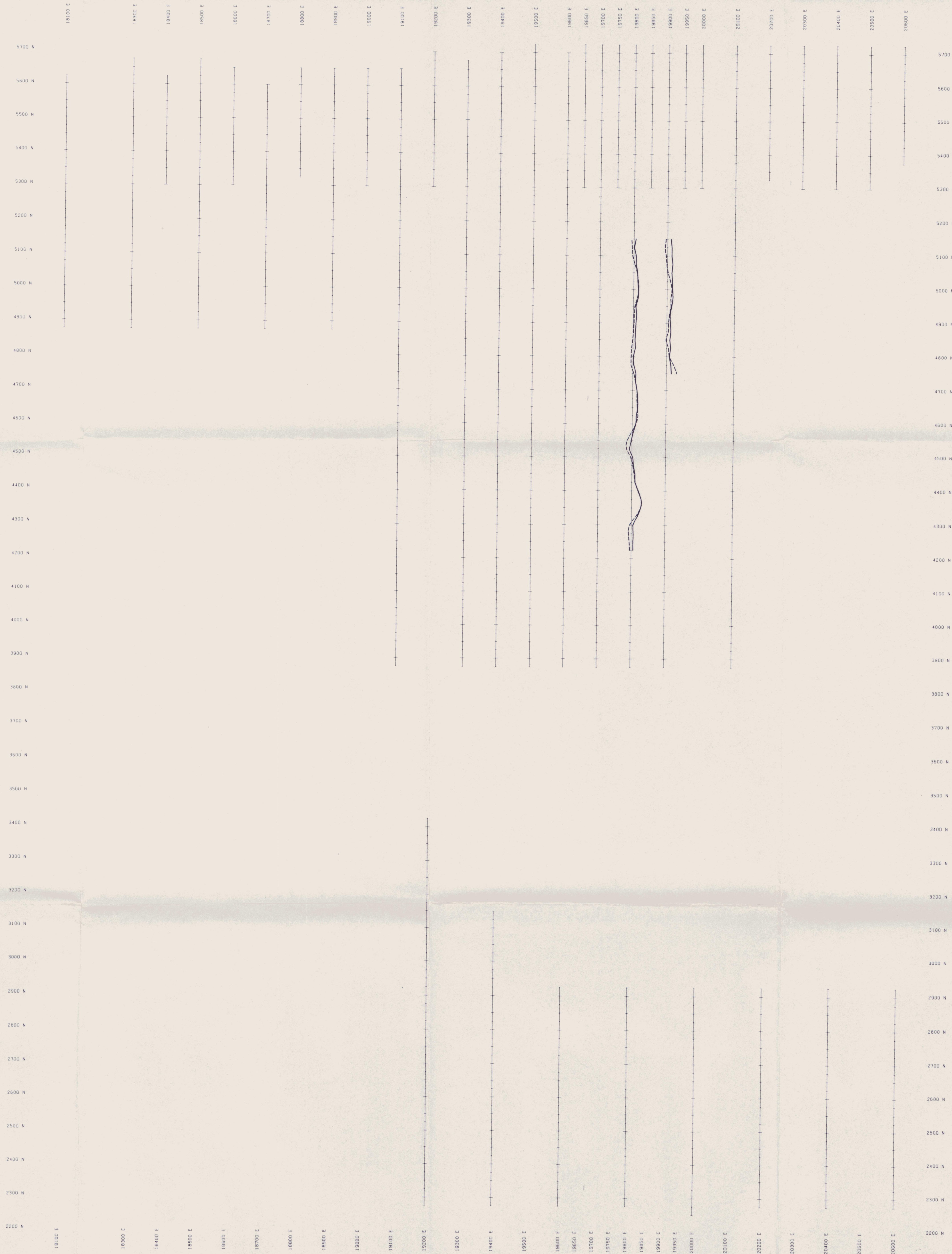


JULY 1994

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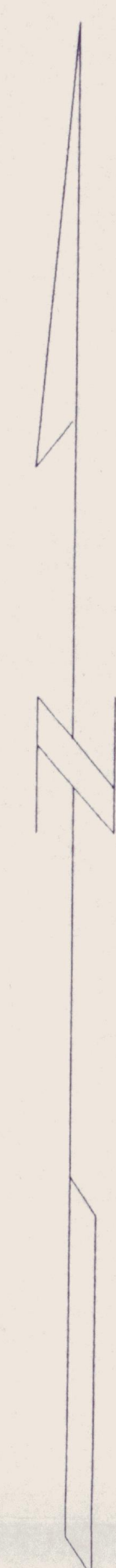
DWG 4

PLATE G2C



LEGEND

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 COIL SEPARATION = 100 METRES



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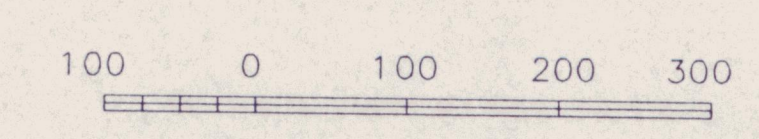
INCO EXPLORATION AND TECHNICAL SERVICES INC.

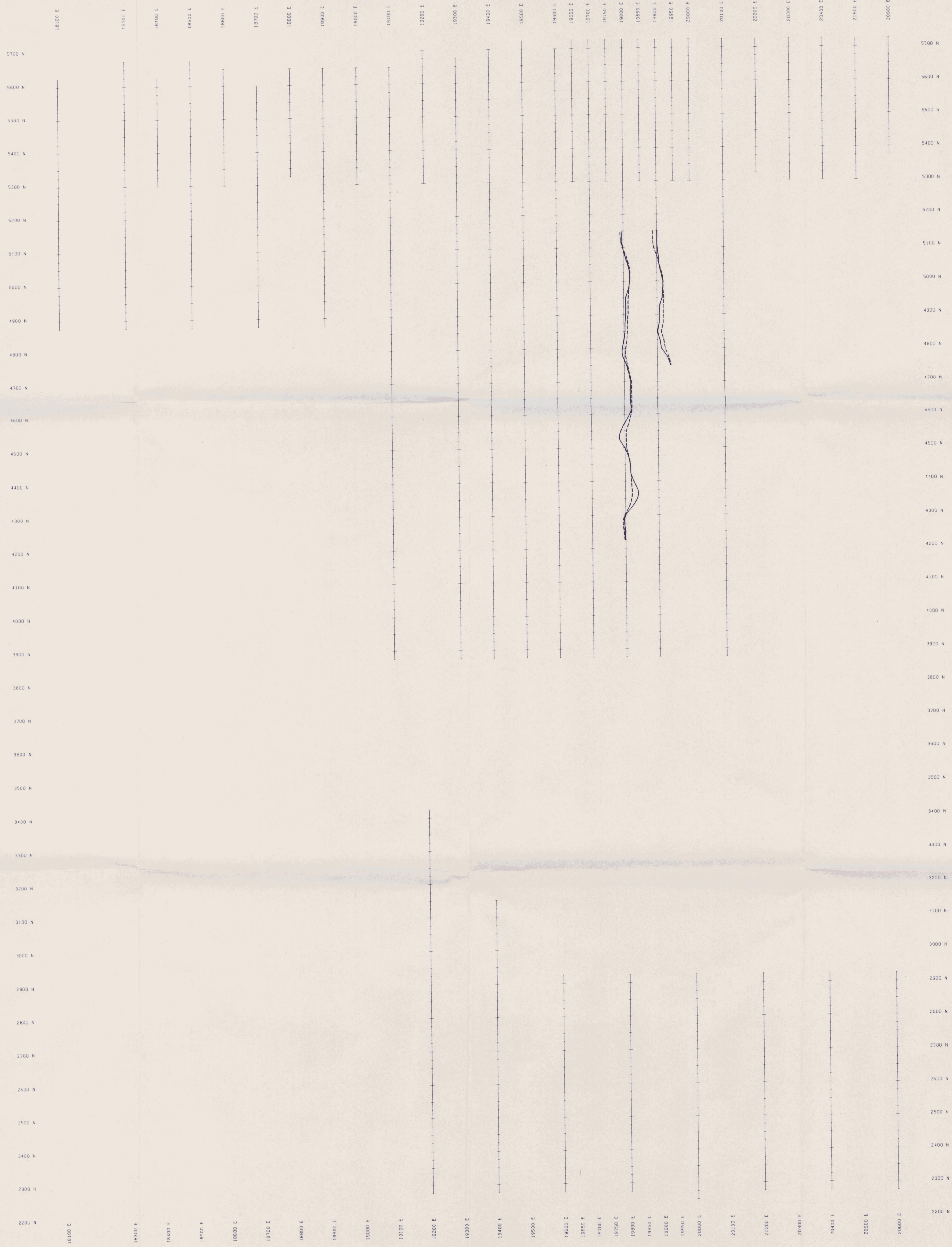
HART RIVER PROJECT

HORIZONTAL LOOP EM PROFILES 440 Hz

OLGIVIE MOUNTAINS, YUKON N.T.S. 116 A/10

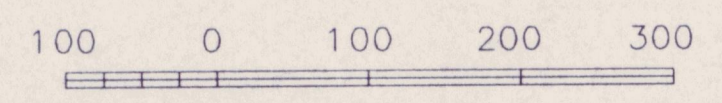
SCALE IN METRES





LEGEND

PROFILES ARE POSITIVE TO LEFT
 DASHED LINES ARE QUADRATURE
 SOLID LINES ARE IN-PHASE
 SCALE = 30%/cm BASE LEVEL = 0
 INSTRUMENTATION: APEX PARAMETRICS MAXMIN 1-10 HLEM
 COIL SEPARATION = 150 METRES



INCO EXPLORATION AND TECHNICAL SERVICES INC.
 HART RIVER PROJECT
HORIZONTAL LOOP EM PROFILES 1760 Hz

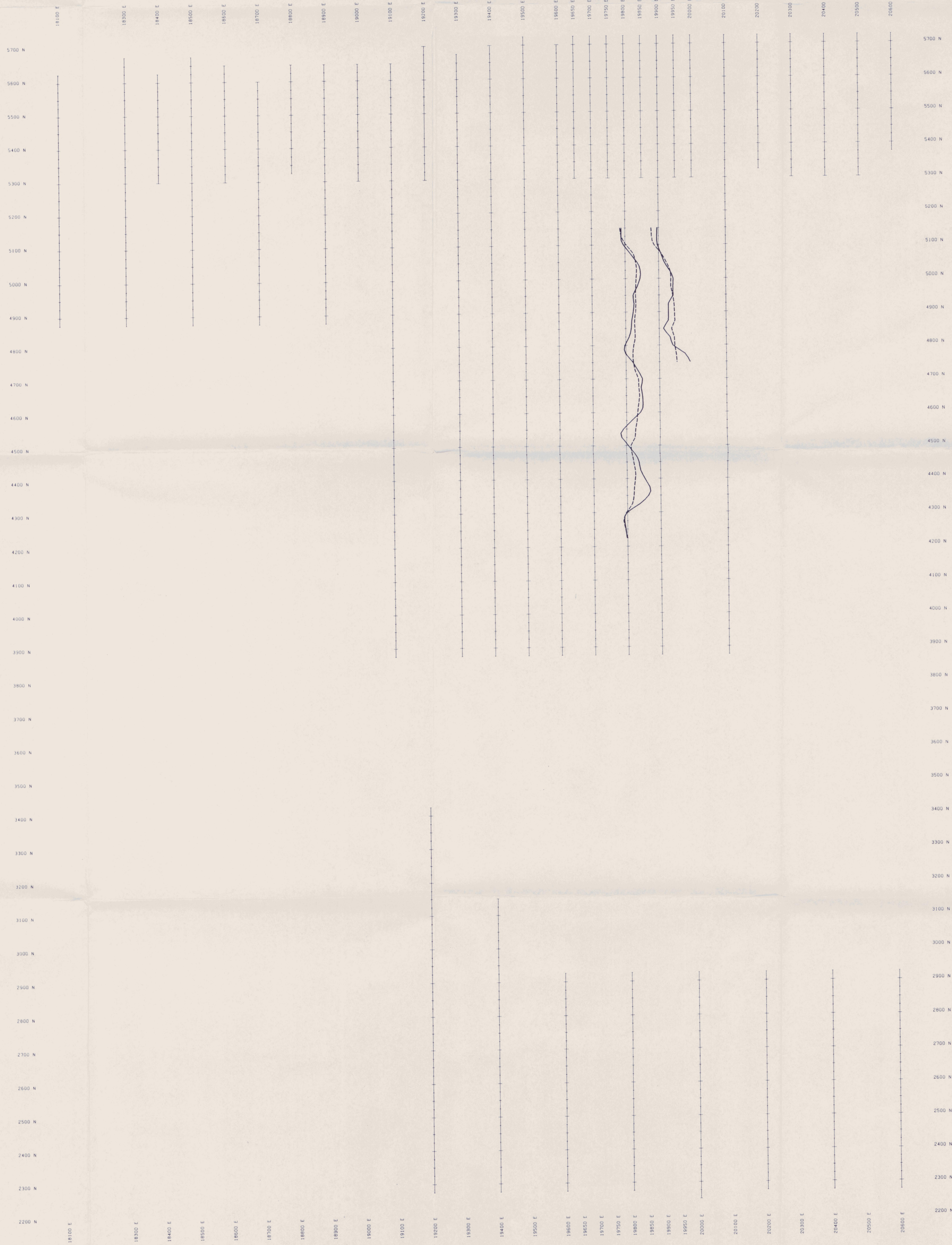
093230

OLGIVE MOUNTAINS, YUKON N.T.S. 116 A/10

SCALE IN METRES

JULY 1994

DWG (6)
 PLATE G3b



LEGEND

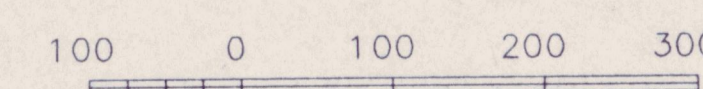
PROFILES ARE POSITIVE TO LEFT
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 SOLID LINES ARE IN-PHASE
 SCALE = 40%/cm BASE LEVEL = 0
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 COIL SEPARATION = 100 METRES

093230

INCO EXPLORATION AND TECHNICAL SERVICES INC.
 HART RIVER PROJECT
HORIZONTAL LOOP EM PROFILES 3520 Hz

OLGIVIE MOUNTAINS, YUKON N.T.S. 116 A/10

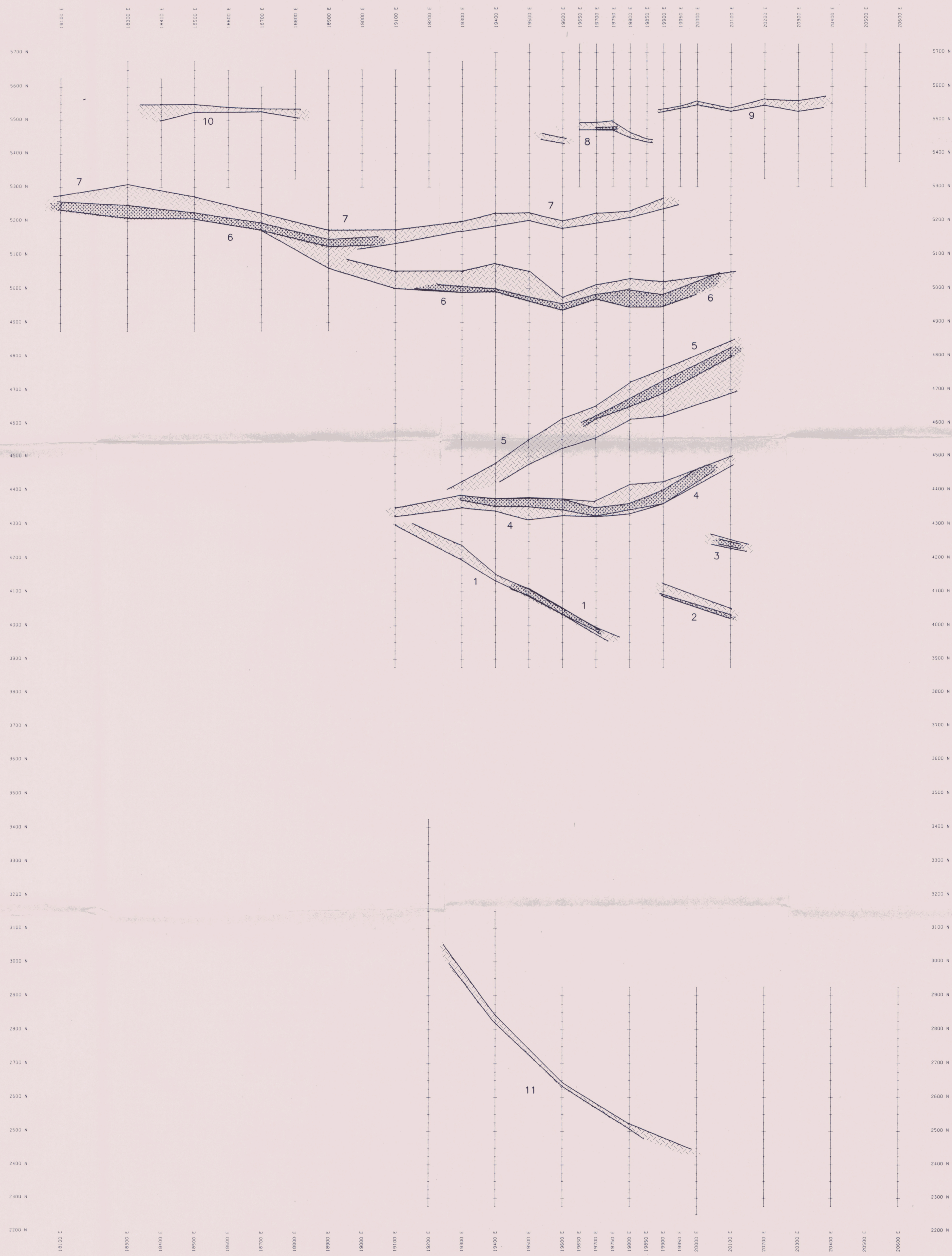
SCALE IN METRES





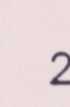
DWG 7

JULY 1994

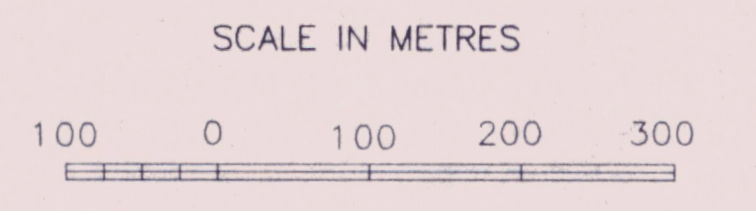
PLATE G3C



LEGEND

-  STRONG CONDUCTOR INTERPRETED FROM 440 HZ DATA
-  WEAK CONDUCTIVE ZONES INTERPRETED FROM 3520 HZ DATA
-  CONDUCTOR NUMBER

INCO EXPLORATION AND TECHNICAL SERVICES INC.
 HART RIVER PROJECT
HLEM COMPILATION MAP 093230
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PLATE G4a

DW 8