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NORANDA INC.
REPORT ON GEOPHYSICAL SURVEYS
(DeepEM 1999)
THE TWIST ROAD PROPERTY
CECIL TOWNSHIP G-2857
N.T.S. 42F/4
WESTERN CANADA REGION

RECEIVED
SEP - 9 1999
GEOSCIENCE ASSESSMENT
OFFICE

PROJECT NO. 510
THUNDER BAY, ONTARIO
SEPTEMBER, 1999

Doc. # 2.17252
DAVID KING
PROJECT GEOLOGIST
GRAHAM ASCOUGH
GEOPHYSICIST



Table of Contents

	Page
SUMMARY	1
1.0 INTRODUCTION	2
2.0 LOCATION AND ACCESS	2
3.0 PROPERTY SUMMARY AND CLAIMS DISPOSITION	2
4.0 GENERAL GEOLOGY AND PREVIOUS WORK	2
5.0 GEOPHYSICS	4
i) Linecutting	4
ii) Survey and Instrumentation	4
a) DeepEM	4
iii) Interpretation	5
a) DeepEM	5
6.0 CONCLUSIONS AND RECOMMENDATIONS	6

List of Appendices

Appendix I	Acknowledgments
Appendix II	Statement of Qualifications
Appendix III	DeepEM Profiles (individual lines)

List of Figures

	Scale
Figure 1 Location Map	1:250000
Figure 2 Claim Sketch	1:10000 (back pocket)
Figure 3 Grid Location Sketch	1:5000 (back pocket)
Figure 4 DeepEM Profiles (X component)	1:5000 (back pocket)
Figure 5 DeepEM Profiles (Y component)	1:5000 (back pocket)
Figure 6 DeepEM Profiles (Z component)	1:5000 (back pocket)

SUMMARY

The Twist Road Property is located 16 km east of the town of Manitouwadge in Northwestern Ontario and consists of 10 claim blocks (totaling 55 units) held 100% by Noranda Inc. A program consisting of linecutting and Deep EM surveying was completed over the Twist Road property during late February - early March of 1999. The aim of the survey was delineate massive sulfide conductors at depths up to 250 meters that may be associated with known surface mineralization. The loop placements for the survey were positioned to examine weak to v. weak EM responses from previous HLEM surveys.

A total of 15.4 km of linecutting was completed, and two DeepEM loops were completed totaling 9.6 line km of data collected.

1.0 INTRODUCTION

The Twist Road Property is located 16 km east of the town of Manitouwadge in Northwestern Ontario and consists of 10 claim blocks (totalling 55 units) held 100% by Noranda Inc. A program consisting of linecutting and Deep EM surveying was completed over the Twist Road property during late February - early March of 1999. The aim of the survey was delineate massive sulfide conductors at depths up to 250 meters that may be associated with known surface mineralization. The loop placements for the survey were positioned to examine weak to v. weak EM responses from previous HLEM surveys.

A list of Noranda personnel and contractors who worked on the Twist Lake Property is given in Appendix I. A Statement of Qualifications is given in Appendix II

2.0 LOCATION AND ACCESS

The Twist Lake Property is located approximately 16 km E-SE of the town of Manitouwadge in Northwestern Ontario (Figure 1). The Macatagon River cuts through the western portion of the property. Access to the property is from secondary logging roads east the town of Manitouwadge. Access is gained by traveling along the Caramat road east from the eastern edge of Manitouwadge Lake. Approximately 8km along the Caramat road the Faries Lake Road turns to the south. The Twist Road extends west from the Faries Lake road and cut through the claim block.

3.0 PROPERTY SUMMARY AND CLAIMS DISPOSITION

The Twist Road Property consists of 10 contiguous claim blocks totalling 55 claim units, held 100% by Noranda Inc. (Figure 2, back pocket). The property is located in Cecil Township, Map Sheet (G-2857), NTS 42F/4. A table of claim holdings is provided below (Table I)

TABLE I: Claim Holdings – Twist Road Property

CLAIM BLOCKS	CLAIM UNITS	RECORDING DATE
1022620	3	July 11, 1997
1022621	4	July 11, 1997
1022622	2	July 11, 1997
1022625	6	May 26, 1997
1022627	15	September 16, 1997
1022628	8	March 4, 1997
1022629	3	September 16, 1997
1141506	6	November 24, 1993
1141507	4	October 24, 1994
1141509	4	October 24, 1994
Total Units	55	

4.0 GENERAL GEOLOGY AND PREVIOUS WORK

The Faires Lake area was mapped by Williams and Breaks (1989, 1990) and they have identified mafic volcanic and layered mafic intrusive rocks in the area. In the Faries Lake area, anorthositic rocks structurally

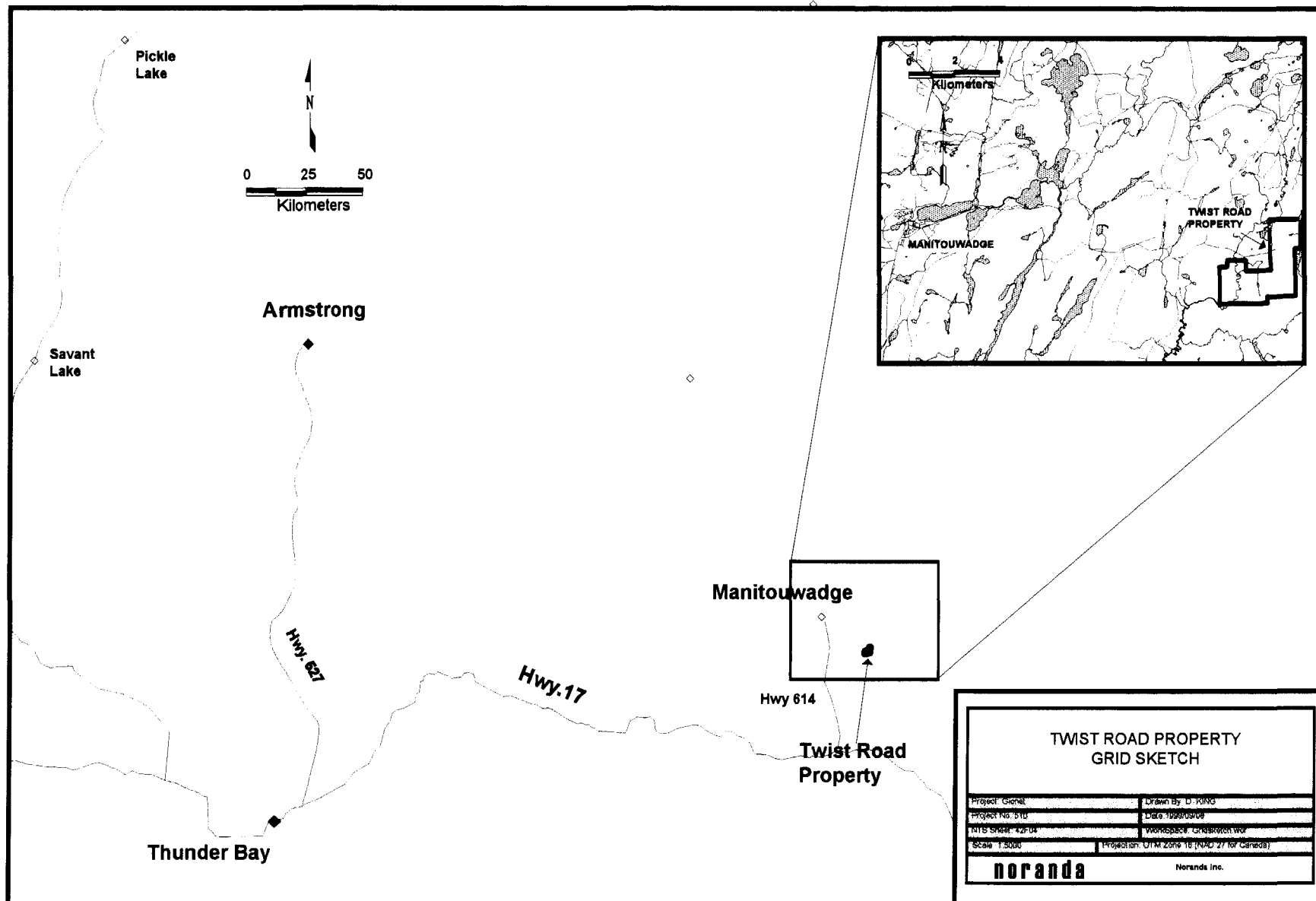


FIGURE 1

over lie mafic to felsic metavolcanic rocks. The anorthositic rocks are part of the Moshkinabi and Faries Lake suites, which are described as mafic metavolcanic rocks and associated gabbro and anorthositic rocks, up to 700m thick. The Twist Road property was originally reconnaissance mapped in the summer of 1988 by Noranda Minerals Inc. (Geco Division). The area was then staked in the winter of 1988 and summer of 1989. More detailed mapping was completed in the summer of 1989 (Charlton, 1990) and geophysical surveys (HLEM, Mag) were completed over the property. The mapping program identified a zone of intense hydrothermal alteration in the area west of Rawluk lake, near an interpreted mafic volcanic-anorthosite contact. This alteration is associated with anomalous copper mineralization and coincident magnetic anomalies. A two hole diamond drill program was completed in 1990 testing the alteration zone and a weak HLEM conductor southwest of the alteration zone. Trenching, Beep-mat surveying and sampling was completed on the property in 1997 by Gilles and Micheal Gionet (Gionet, 1999). The property was optioned in 1999 by Noranda Inc. and geophysical surveys were completed in the winter of 1999 (This Report).

5.0 GEOPHYSICS

i) Linecutting

A total of 15.4 km of linecutting on the Twist Road property was completed in late February, 1999 to provide control for geophysical surveys. A 2200m baseline, trending at 15°, was cut from L600 S to L1600N. Winglines, trending 285°, were cut at 200m spacing and range in length from 1000m to 1400m. A 1:5000 scale map showing claim boundaries and the location of the grid in relation to topographic features is given as Figure 3 (back pocket).

ii) Survey and Instrumentation

A Crone 20 channel PEM receiver was used with a Crone 2000 Watt PEM transmitter and a Honda 2 kW motor generator. The transmitter has a peak output current capability of 20 Amps, but smaller currents are generally used (5.6 amps in this case). Two current on times (10.8 and 21.6 ms), and 3 current shut off ramps (0.5, 1 and 1.5 msec) are available. In this case the survey employed a constant gain setting of 800, a 21.6 msec time base and a 1 msec shut off ramp.

For the Deep EM survey, the vertical or 'Z' component, in-plane perpendicular or 'X' component and Y components of the secondary field were measured using the standard Crone receiving coil. The standard receiver coil (antenna) consists of a ferrite cored copper wire coil with a preamplifier that provides 20 dB of amplification.

Synchronization between the transmitter and receiver occurs via radio or cable link. In this case all synchronization occurred through a radio link. For each survey the primary field inside the loop is positive, outside the loop it is negative and no secondary influence on the primary field is assumed.

a) DeepEM:

Two transmitter loops (1000mx600m) were laid out to delineate EM targets at depths of approximately 250m. X, Y and Z components of the secondary field were recorded on all. All readings were taken at a 25 metre station interval. A total of 9.425 line km of ground survey was completed. Loop locations summarized in Table 2.

Results are presented in figures 4-6 as plan maps of LIN-LOG profiles at a scale of 1:5000 for each component (X,Y,&Z) along with individual line profiles (Appendix III).

Table 2. Loop placements for the Deep EM survey.

Loop No.	Size (m)	Current (Amps)	Corner Positions
Loop 1 (South)	1000X600	8.5	600S,1200W 600S,600W 400N,600W 400N,1200W
Loop 2 (North)	1000X600	8	400N,1200W 400N,600W 1400N,600W 1400N,1200W

iii) Interpretation

a) DeepEM:

There is only one significant conductor evident in the data. It is a weak 7 channel response located on line 600N at 425W. On the Z component it manifests itself as a positive to negative inflection ("crossover") going from west to east. On the X component data the anomaly is complex and in the early-times is characterised by a positive peak and in the mid-times is characterised by a negative peak. There is no late time response. This change in polarity of the response can be attributed to IP effects and is often observed in weak conductors or conductors of limited size. Modelling of this response indicates a good fit between the observed and calculated data for a small, near vertical plate with a strike length of 100m a depth extent of 50m and a conductivity thickness product of 50S centred on line 600N at 425W. The mineralization observed at surface at this location (disseminated to stringer pyrrhotite-chalcopyrite) adequately explains the observed response.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Drill testing the known mineralization at depth to test continuity of the zone and the accuracy of the modeling should be considered. However, this is a low priority as the TEM work does not indicate any significant near surface massive sulphide bodies.

Respectfully submitted,

NORANDA INC.




David King
Project Geologist
Western Canada Region
Graham Ascough
Geophysicist

Thunder Bay, Ontario
September, 1999

LIST OF REFERENCES

- Williams, H. R. and Breaks, F. W., 1989. Project Unit 89-13, Geological Studies in the Manitouwadge-Hompayne Area. In Summary of Field Work and Other Activities, 1989., Ontario Geological Survey Miscellaneous Paper 146.**
- Williams, H. R. and Breaks, F. W., 1990. Project Unit 89-13, Geological Studies in the Manitouwadge-Hompayne Region. In Summary of Field Work and Other Activities, 1990, Ontario Geological Survey Miscellaneous Paper 151.**
- Charlton, 1990, North Faires Lake Area, 1989, Unpublished Assessment Work Report, Noranda Minerals Inc. Geco Division.**
- Gionet, Gilles and Micheal., 1999, Faires Lake Property, Unpublished Assessment Work Report**

APPENDIX I

ACKNOWLEDGEMENTS

The following is a list of Noranda personnel who supervised work carried out on the Twist Road Property:

NAME	POSITION	ADDRESS
R. Adair	District Manager	874 Tungsten St., Thunder Bay, ON
D. King	Project Geologist	874 Tungsten St., Thunder Bay, ON
G. Ascough	Geophysicist	874 Tungsten St., Thunder Bay, ON

The following is a list of contractors who provided services on the Twist Road Property:

CONTRACTOR	ADDRESS	WORK TYPE
Phantom Explorations Services Ltd.	Thunder Bay, ON	Linecutting, DeepEM Survey

APPENDIX II

STATEMENT OF QUALIFICATIONS

I David King, hereby certify that:

1. I am a practicing geologist with Noranda Mining and Exploration Inc. in Thunder Bay, Ontario and reside at 299 Sunflower Street, Thunder Bay, Ontario.
2. I am a graduate of Lakehead University with a degree of H.B.Sc. Geology.
3. I am a graduate of Lakehead University with a degree of M.Sc. Geology.
3. I am a Canadian Citizen.
4. I have practiced my profession for since graduating in 1994.
5. I do not have, nor do I expect to receive, directly or indirectly, any interest in the properties of Noranda inc.

SIGNATURE:



DATE:

Sept 7/99

APPENDIX III

TEM PROFILES



Ontario

Ministry of Northern Development

Declaration of Assessment Work on Mining Land

section 65(2) and 66(3), R.S.O. 1990

on 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, the work and correspond with the mining land holder. Questions about this collection of Mines, 6th floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Transaction Number (office use)

GIONET-NEW

Assessment Files Research Imaging

W. 9940.00240



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900

According a claim, use form 0240.

-Please type or print in ink

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1. Recorded holder(s). (Attach a list if necessary)

Name	NORANDA INC.	Client Number	176211
Address	874 TUNGSTEN STREET THUNDER BAY, ONTARIO	Telephone Number	(807) 623-4339
		Fax Number	(807) 623-0452
Name		Client Number	
Address		Telephone Number	
		Fax Number	

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SEP 09 1999

2. Type of work performed Check and report only ONE of the following groups for this declaration

- Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling, stripping, trenching and associated assays Rehabilitation

Work Type	Geotechnical Survey Geophysical - DEEPEM SURVEY	Office Use
		Commodity
		Total \$ Value of Work Claimed
		27,314. ⁰⁰
Dates Work Performed	From 11 02 99 To 09 03 99 Day Month Year Day Month Year	NTS Reference
Global Positioning System Data (if available)	Township/Area CECIL M or G-Plan number G-2857	Mining Division Thunder Bay Resident Geologist District

Please remember to: - obtain a work permit from the Ministry of natural Resources as required
 - provide proper notice to surface rights holders before starting work;
 - complete and attach a Statement of Costs, form 0212;
 - provide a map showing contiguous mining lands that are linked for assigning work
 - include two copies of your technical report.

3. Person or companies who prepared the technical report

Name	RICHARD KRUSE	Telephone Number	(807) 623-4339
Address	874 TUNGSTEN STREET, THUNDER BAY, ONT	Fax Number	(807) 623-0452
Name	DAVID KING	Telephone Number	SAME
Address	874 TUNGSTEN ST - THUNDER BAY	Fax Number	
Name	GRAHAM ASCOUGH	Telephone Number	
Address	874 TUNGSTEN ST, THUNDER BAY	Fax Number	

4. Certification by Recorded Holder or Agent

I, RICHARD KRUSE, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed by me or my agent after completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent	<i>Richard Kruse</i>	Date	08-Sep-99
Agent's Address	874 TUNGSTEN ST, THUNDER BAY	Telephone Number	807 623-4339
		Fax Number	623-0452

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5. Work to be recorded and distributed Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W-9940-00240

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
TB 1022620	3	\$3,291.00	\$1,200.00	\$2,091.00	\$0.00
TB 1022621	4	\$2,435.00	\$1,600.00	\$835.00	\$0.00
TB 1022622	2	\$3,847.00	\$800.00	\$3,047.00	\$0.00
TB 1022625	6	\$8,737.00	\$2,914.00	\$5,823.00	\$0.00
TB 1022627	15	\$8,975.00	\$12,000.00	\$0.00	\$0.00
TB 1022628	8	\$0.00	\$3,200.00	\$0.00	\$0.00
TB 1022629	3	\$29.00	\$2,400.00	\$0.00	\$0.00
TB 1141507	4	\$0.00	\$1,600.00	\$0.00	\$0.00
TB 1141509	4	\$0.00	\$1,600.00	\$0.00	\$0.00
Column Totals:		\$27,314.00	\$27,314.00	\$11,796.00	\$0.00

I, RICHARD KRUSE, do hereby certify that the above work credits are eligible under subsection 7(1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent (authorized in writing) Richard Kruse Date 08-Sep-99

6. Instructions for cutting back credits that are not approve

Some of the credits claimed in this declaration may be cut back. Please check in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe);

Note: if you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

RECORDED
SEP 09 1999

1st 1022625 ←
2nd 1022628

RECEIVED
SEP 09 1999
GEOSCIENCE ASSESSMENT
OFFICE



Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

GIONET-NEW

Transaction Number (office use) W.9940.00240

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

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Table with 4 columns: Work Type, Units of work, Cost Per Unit of work, Total Cost. Rows include Linecutting, Deepem survey, labour, Associated Costs (e.g. supplies, mobilization and demobilization), Mob-demob, Equipment rental, Transportation Costs, Food and Lodging Costs, and Total Value of Assessment Work (27,314).

RECORDED SEP 09 1999

Calculations of Filing Discounts:

- 1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total \$ value of worked claimed.

Note: - Work older than 5 years is not eligible for credit. - A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, RICHARD KRUSE, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying

Declaration of Work form as AGENT I am authorized to make this certification.

Signature: Richard Kruse Date: Sept 8, 1999

RECEIVED SEP 09 1999 GEOSCIENCE ASSESSMENT OFFICE

December 08/99

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

September 23, 1999

Richard Kruse
NORANDA INC.
874 TUNGSTEN STREET
THUNDER BAY, Ontario
P7B-6J3

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

Dear Sir or Madam:

Submission Number: 2.19698

Status

Subject: Transaction Number(s): W9940.00240 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at steve.beneteau@ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,



ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.19698

Date Correspondence Sent: September 23, 1999

Assessor: Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9940.00240	1022620	CECIL	Deemed Approval	September 20, 1999

Section:

14 Geophysical EM

Correspondence to:

Resident Geologist
Thunder Bay, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Richard Kruse
NORANDA INC.
THUNDER BAY, Ontario

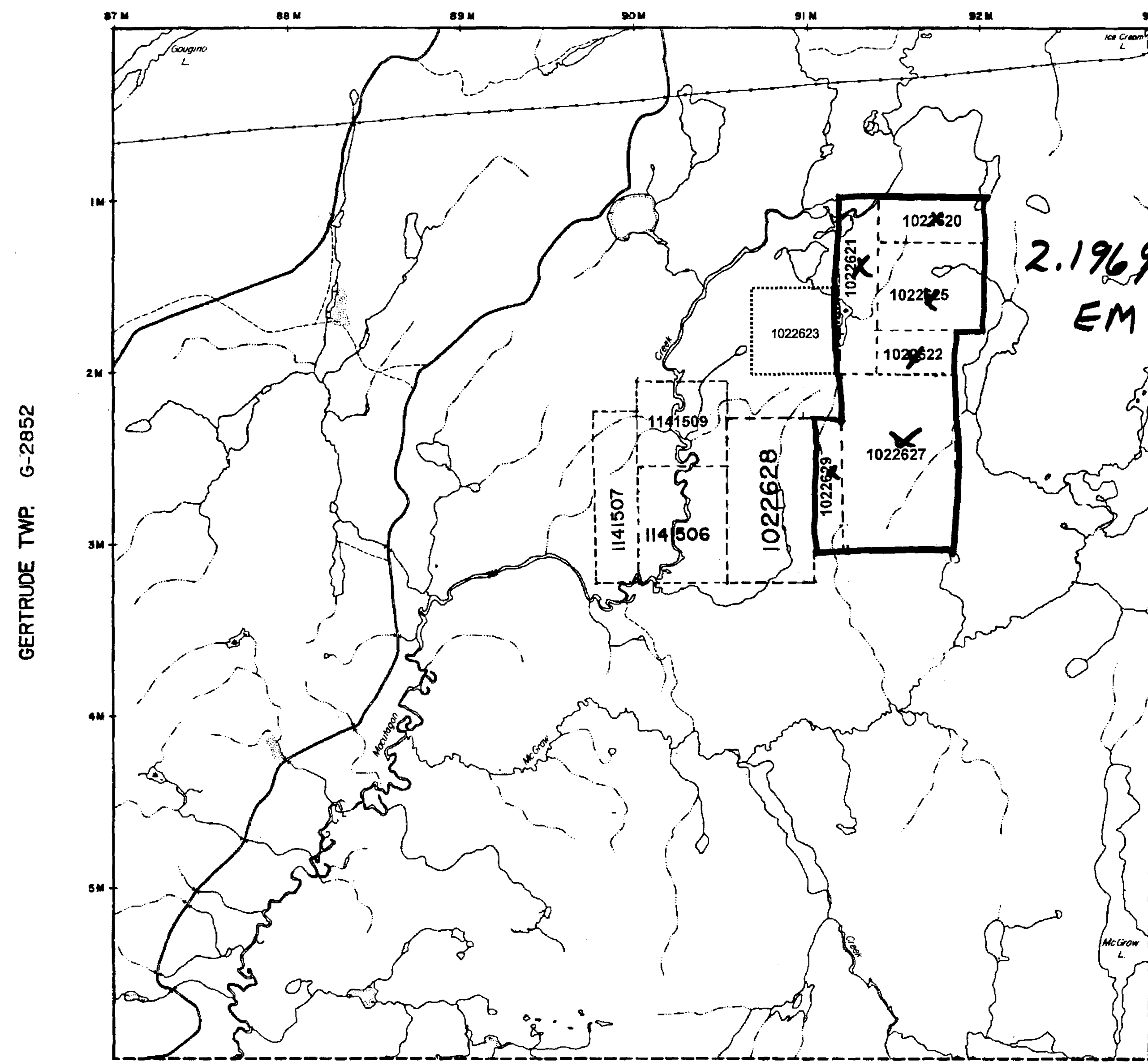
REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

Description	Order No.	Date	Disposition	Folio
M.R.O. - MINING RIGHTS ONLY				
S.R.O. - SURFACE RIGHTS ONLY				
M. & S. - MINING AND SURFACE RIGHTS				

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

NICKLE TWP G-2853



McGRAW LAKE G-602

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	◇
RESERVATION	⬇
CANCELLED	⊘
SAND & GRAVEL	⊙
LAND USE PERMITS FOR COMMERCIAL TOURISM OUTPOST CAMPS	⊚

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO 1885, VESTED IN ORIGINAL PATENTEES BY THE PUBLIC SUBDIVISION ACT (R.S.O. 1990, SEC. 43) SUBJECT TO THE DISPOSITION THAT APPEARS ON THIS MAP. THIS INFORMATION HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED.

SCALE: 1 INCH = 40 CHAINS

OCT 6 1999

1:10000

TOWNSHIP
CECIL
 M.N.R. ADMINISTRATIVE DISTRICT
 TERRACE BAY
 MINING DIVISION
 THUNDER BAY
 LAND TITLES / REGISTRY DIVISION
 THUNDER BAY

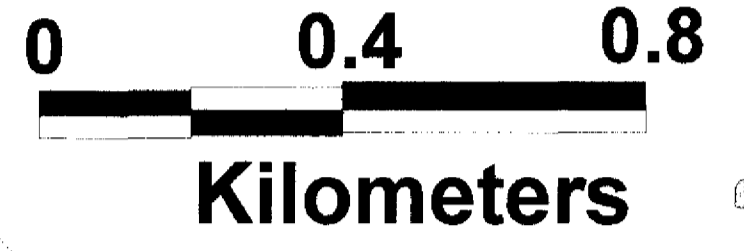
Ministry of Natural Resources and Mines
 Ministry of Northern Development and Mines
 Ontario
 MARCH 4, 1999 IN SERVICE
 NOVEMBER, 1995

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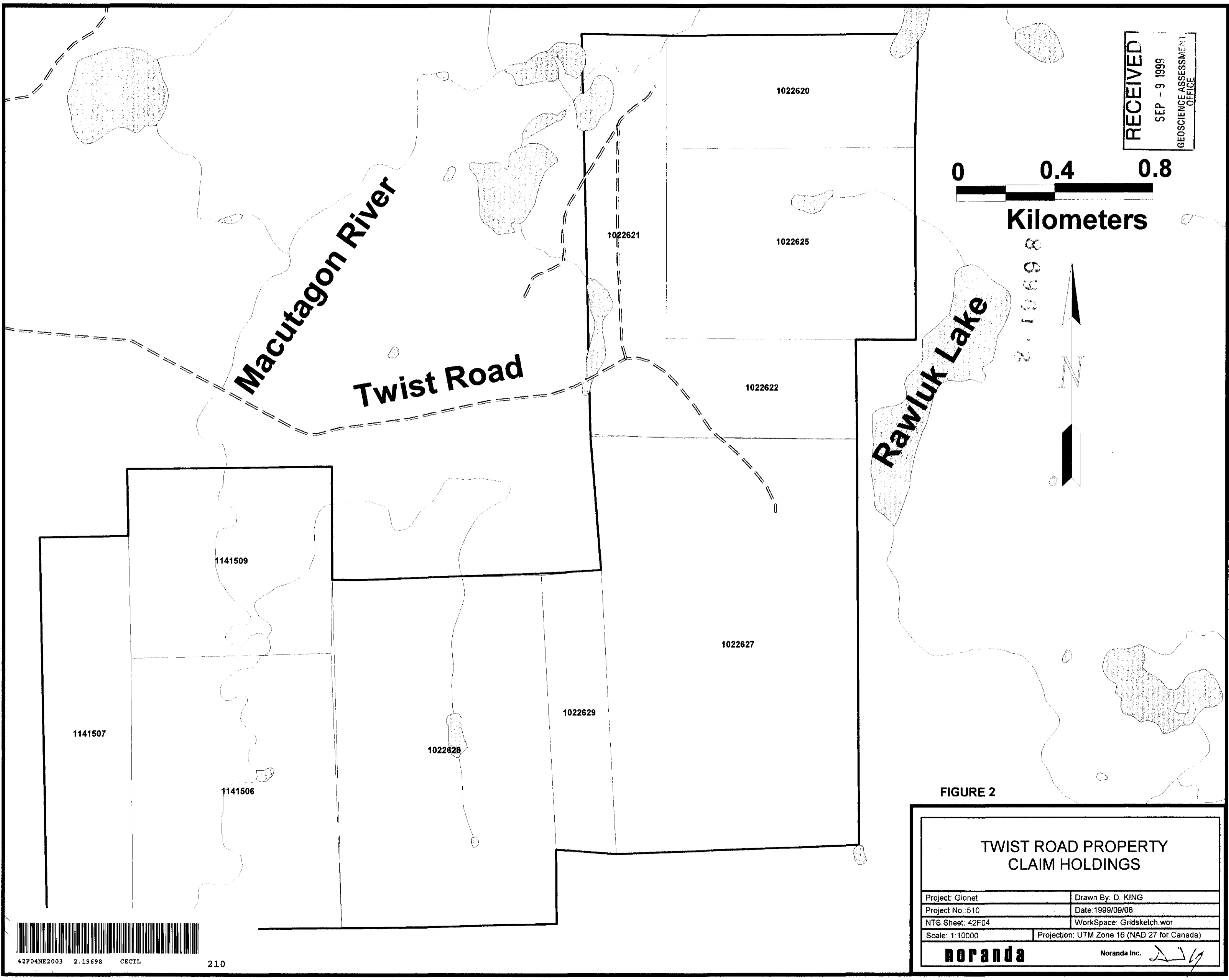
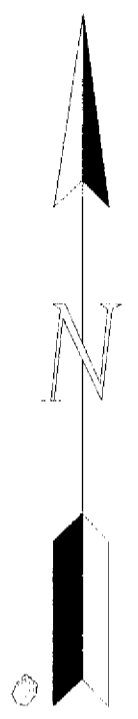


FIGURE 2

**TWIST ROAD PROPERTY
CLAIM HOLDINGS**

Project: Gionet	Drawn By: D. KING
Project No.: 510	Date: 1999/09/08
NTS Sheet: 42F04	WorkSpace: Gridsketch.wor
Scale: 1:10000	Projection: UTM Zone 16 (NAD 27 for Canada)

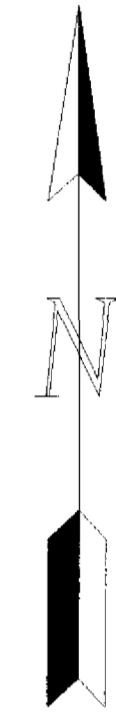
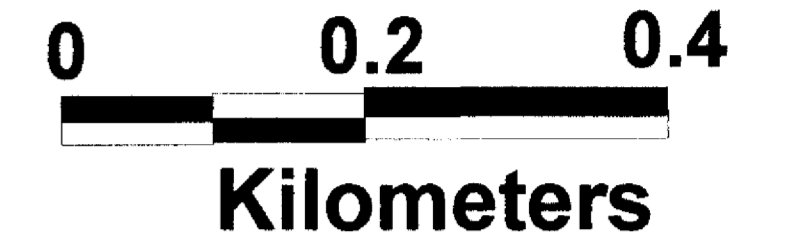
noranda

Noranda Inc. *[Signature]*



Twist Road

B10+00W
Az 15 deg



Rawiuk Lake

L16+00N

L14+00N

L12+00N

L10+00N

L8+00N

L6+00N

L4+00N

L2+00N

L0+00N

L2+00S

L4+00S

L6+00S

1022620

1022621

1022625

1022622

1022627

FIGURE 3

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GEOSCIENCE ASSESSMENT
AGENCY

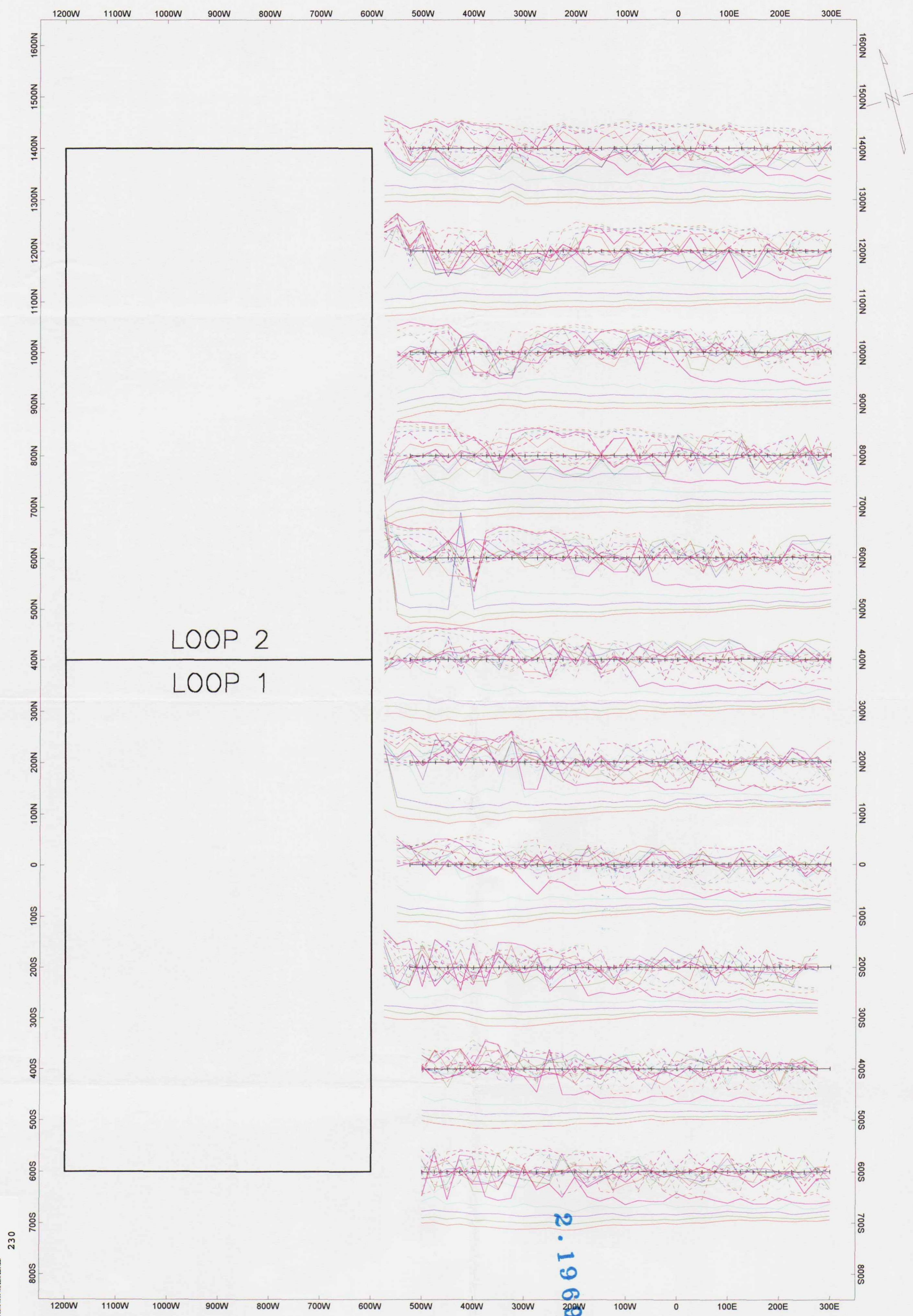
**TWIST ROAD PROPERTY
GRID SKETCH**

Project: Gionet	Drawn By: D. KING
Project No.: 510	Date: 1999/09/08
NTS Sheet: 42F04	WorkSpace: Gridsketch.wor
Scale: 1:5000	Projection: UTM Zone 16 (NAD 27 for Canada)

noranda

Noranda Inc.





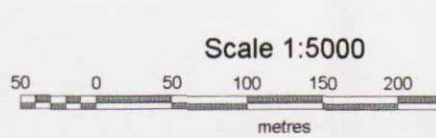
LOOP 2
 LOOP 1

230
 42F04NE2003 2.19698
 CECTL

Instrument: Crane
 Receiver: Crane 20 channel PEM
 Transmitter: Crane PEM Tx
 Time Base: 16.66 ms
 Shut-off Ramp: 1.0 msec
 Data Units = nT/s Operator: Phantom Geophysics
 Current: 8.5 amps

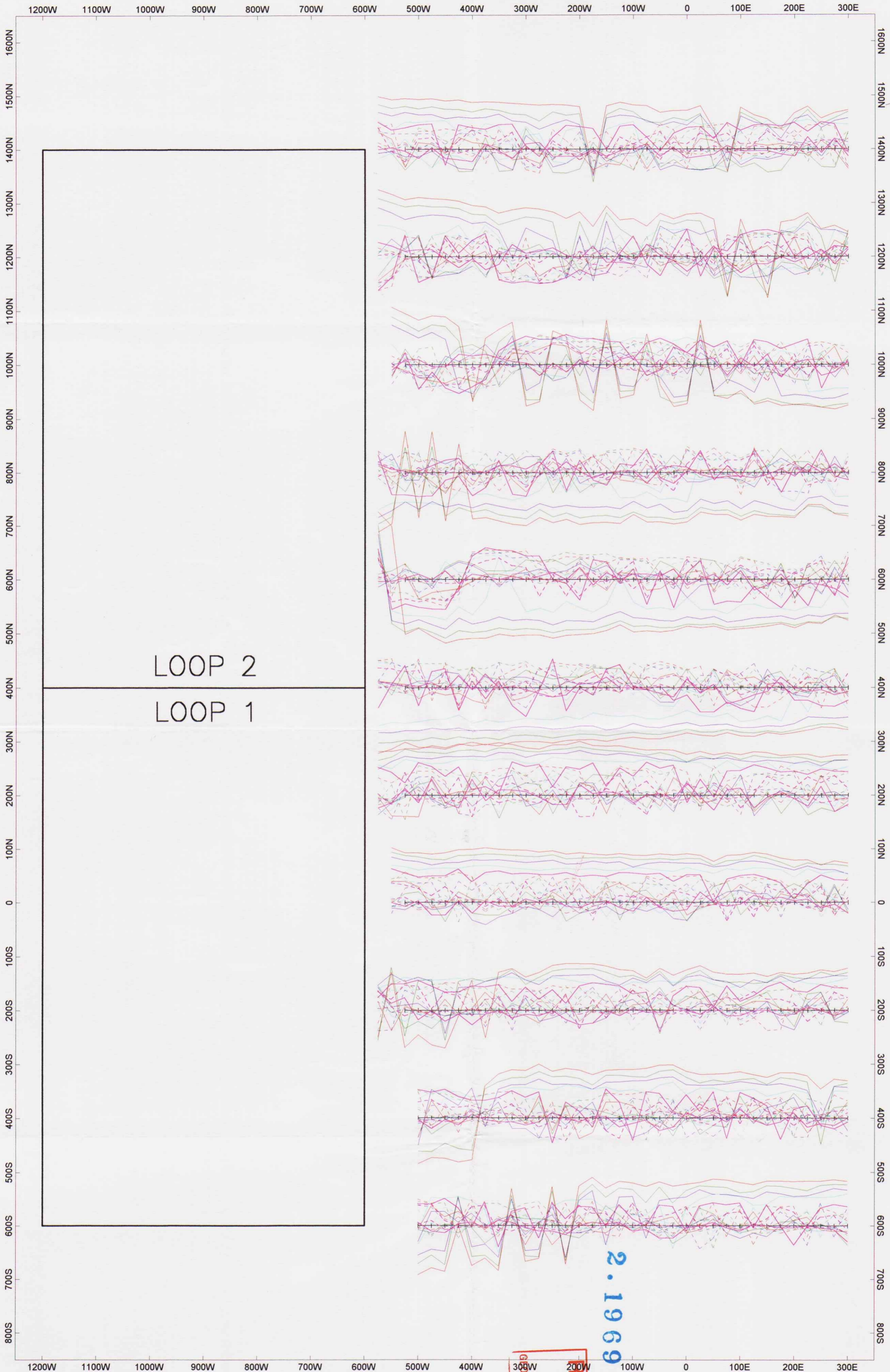
LOG/LIN PROFILE SCALE 1cm = 1.5 decades

FIGURE 4



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 GEOSCIENCE ASSESSMENT
 OFFICE

GIONET OPTION	
FIXED LOOP TEM SURVEY	
X Component Profiles	
Project: Gionet Option #510	
Date: March 8, 1999 NTS:42 F/4	
BL Azimuth: 15 deg BL: 0.0E	
Survey By: RS, JM	
File: GIONET99.GDB	
Noranda Inc	
874 Tungsten St, Thunder Bay, On	



LOOP 2
LOOP 1

240

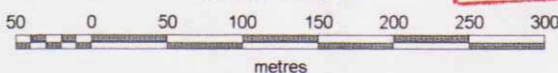


Instrument: Crone
Receiver: Crone 20 channel PEM
Transmitter: Crone PEM Tx
Time Base: 16.66 ms
Shut-off Ramp: 1.0 msec
Data Units = nT/s Operator: Phantom Geophysics
Current: 8.5 amps

LOG/LIN PROFILE SCALE 1cm = 1.5 decades

FIGURE 5

Scale 1:5000



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 OFFICE

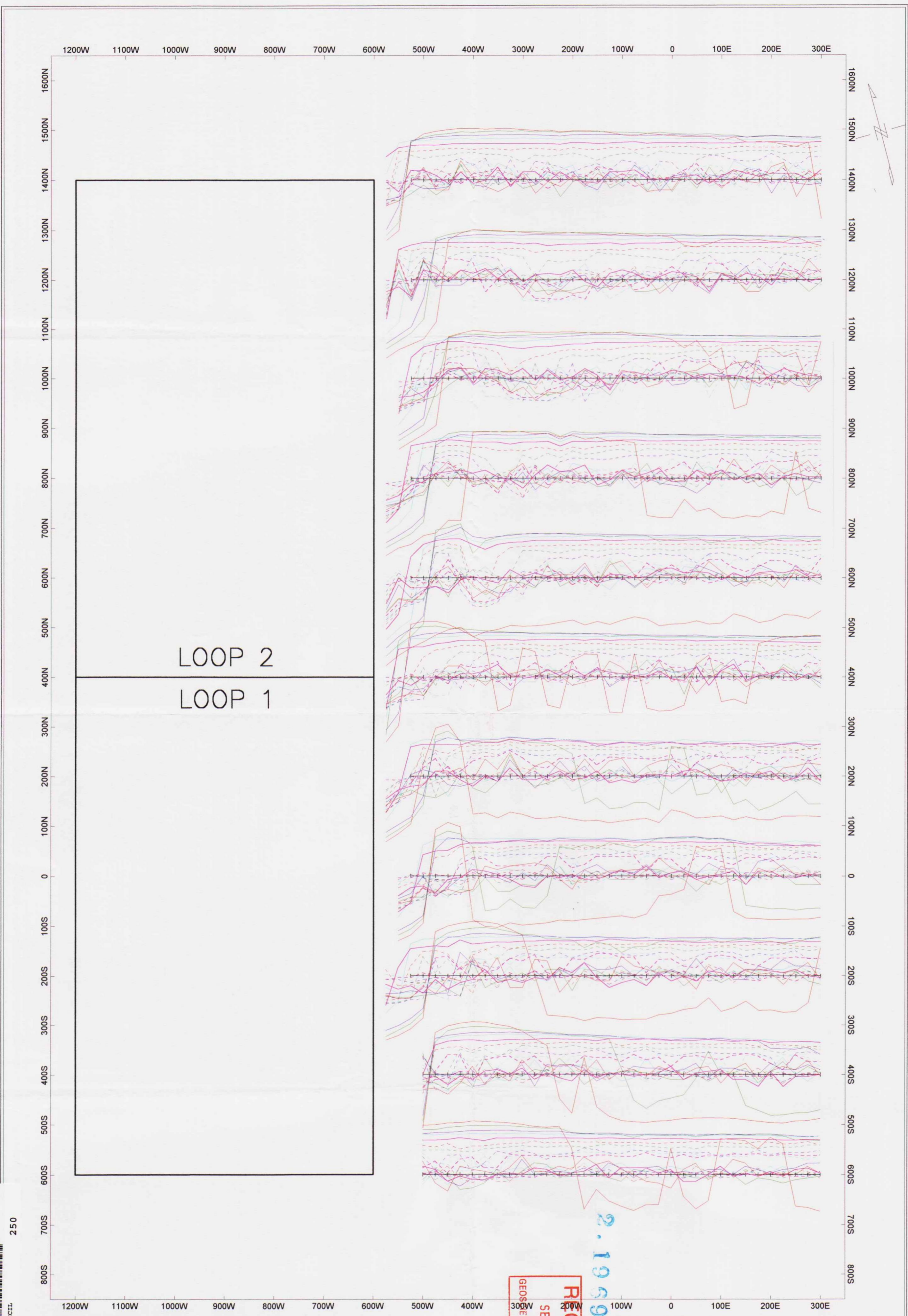
2.19698

GIONET OPTION

**FIXED LOOP TEM SURVEY
Y Component Profiles
Project: Gionet Option #510**

Date: March 8, 1999 NTS:42 F/4
BL Azimuth: 15 deg BL: 0.0E
Survey By: RS, JM
File: GIONET99.GDB

Noranda Inc
874 Tungsten St, Thunder Bay, On



LOOP 2
 LOOP 1



Instrument: Crone
 Receiver: Crone 20 channel PEM
 Transmitter: Crone PEM Tx
 Time Base: 16.66 ms
 Shut-off Ramp: 1.0 msec
 Data Units = nT/s Operator: Phantom Geophysics
 Current: 8.5 amps

LOG/LIN PROFILE SCALE 1cm = 1.5 decades

FIGURE 6

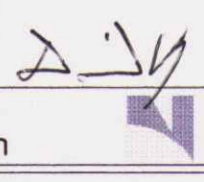
Scale 1:5000



RECEIVED
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 GEOPHYSICS ASSESSMENT
 OFFICE

2-19698

GIONET OPTION FIXED LOOP TEM SURVEY Z Component Profiles Project: Gionet Option #510	
Date: March 8, 1999 NTS:42 F/4 BL Azimuth: 15 deg BL: 0.0E Survey By: RS, JM File: GIONET99.GDB	
Noranda Inc 874 Tungsten St, Thunder Bay, On	

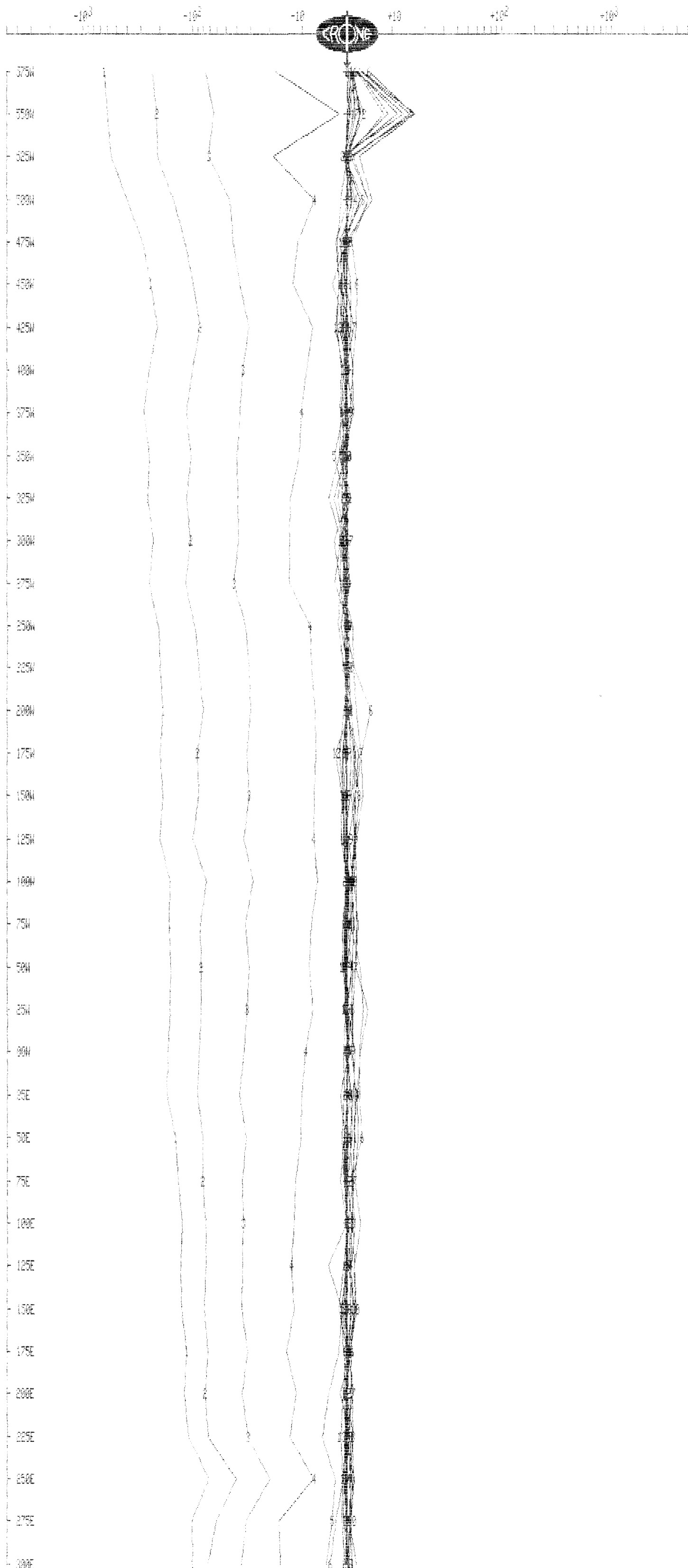


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 7, 1999

Line : 1200N
Tx Loop : LOOP2W
File name : L1200NL2.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500

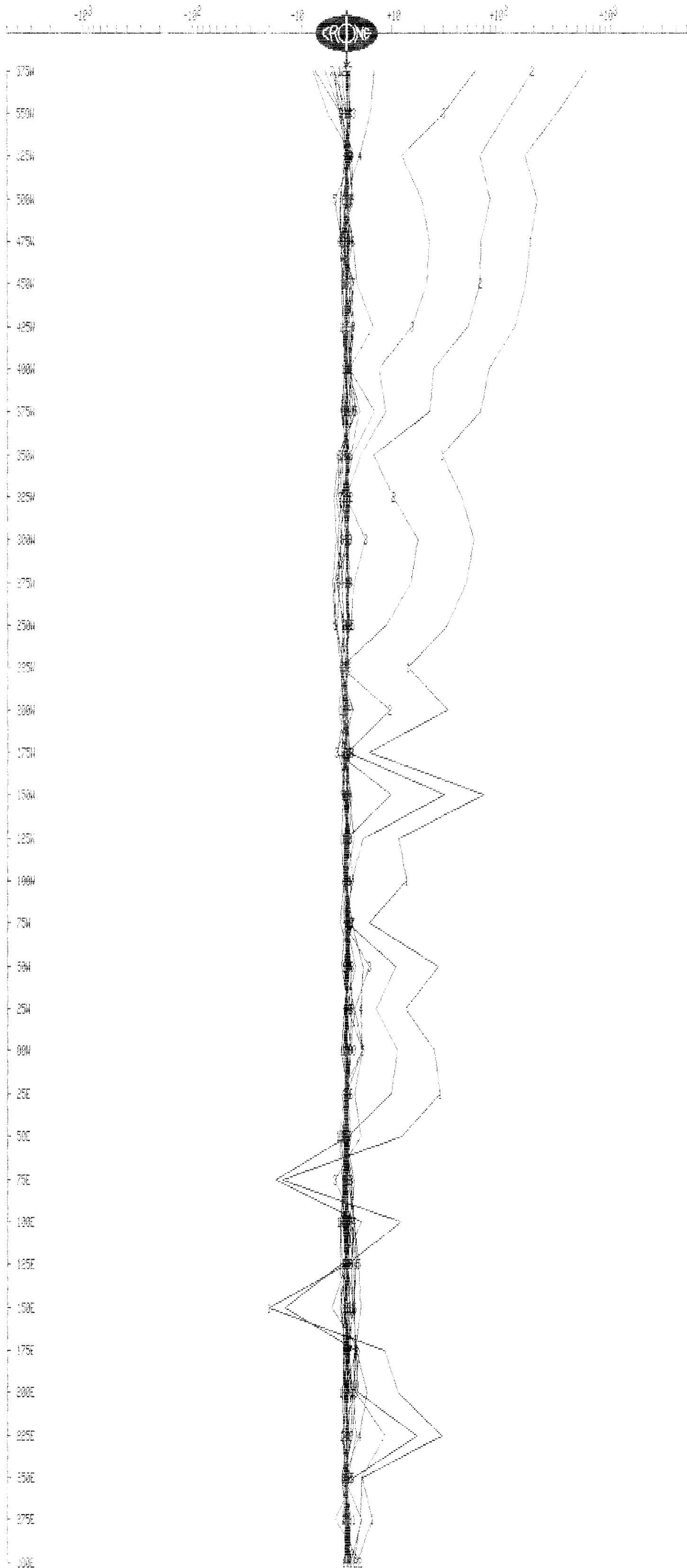


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 7, 1999

Line : 1200N
Tx Loop : LOOP2W
File name : L1200NL2.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



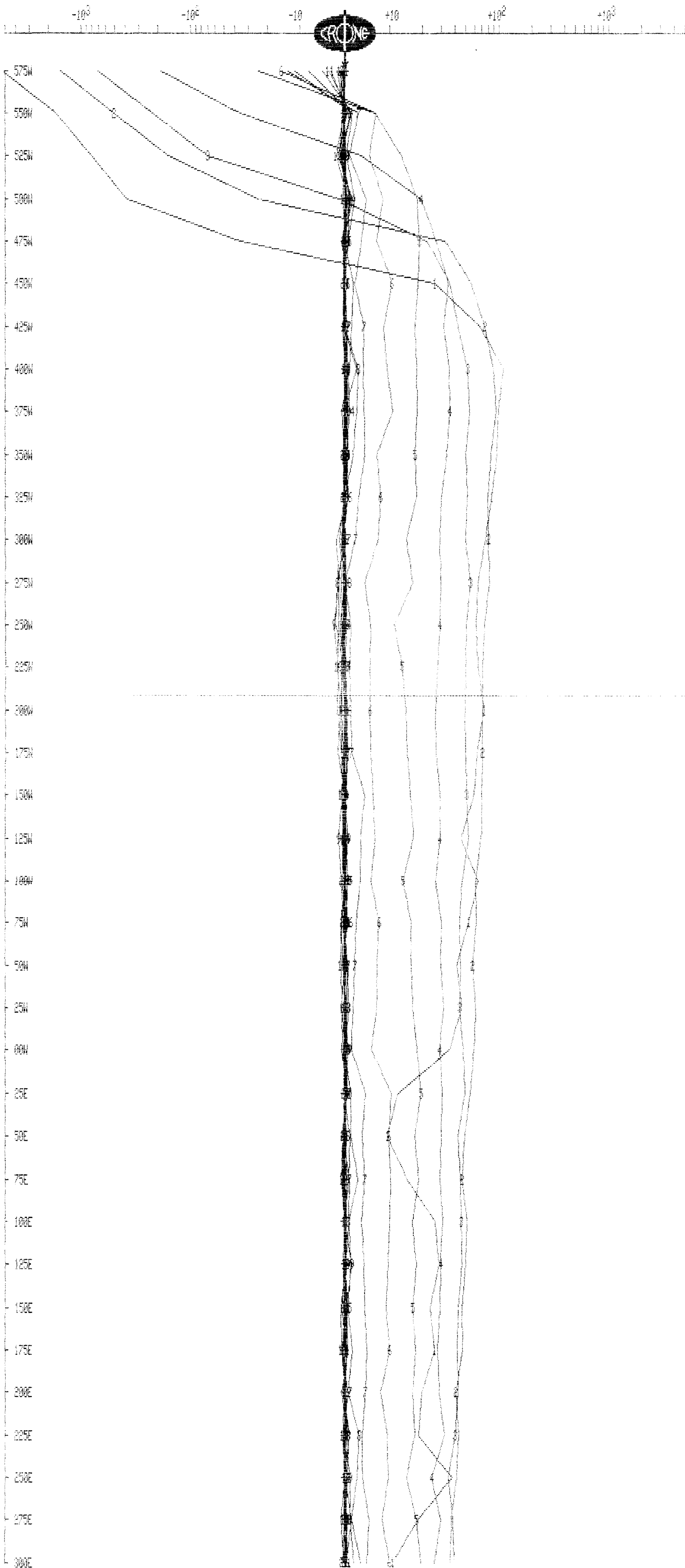
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 7, 1999

Line : 1200N
Tx Loop : LOOP2W
File name : L1200NL2.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500



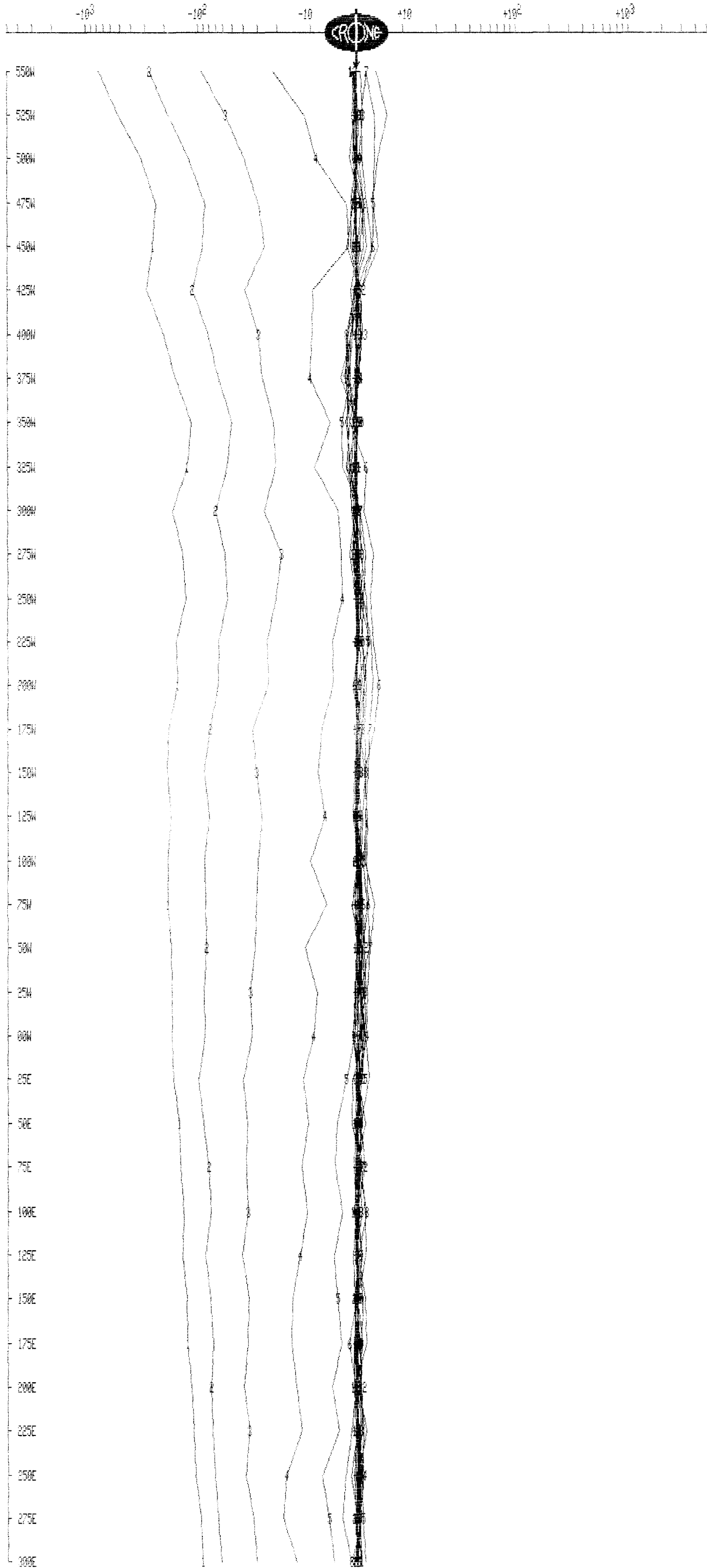
42F04NE2003 2.19698 CECIL

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 7, 1999

Line : 1000N
Tx Loop : LOOP2W
File name : L1000NL2.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500

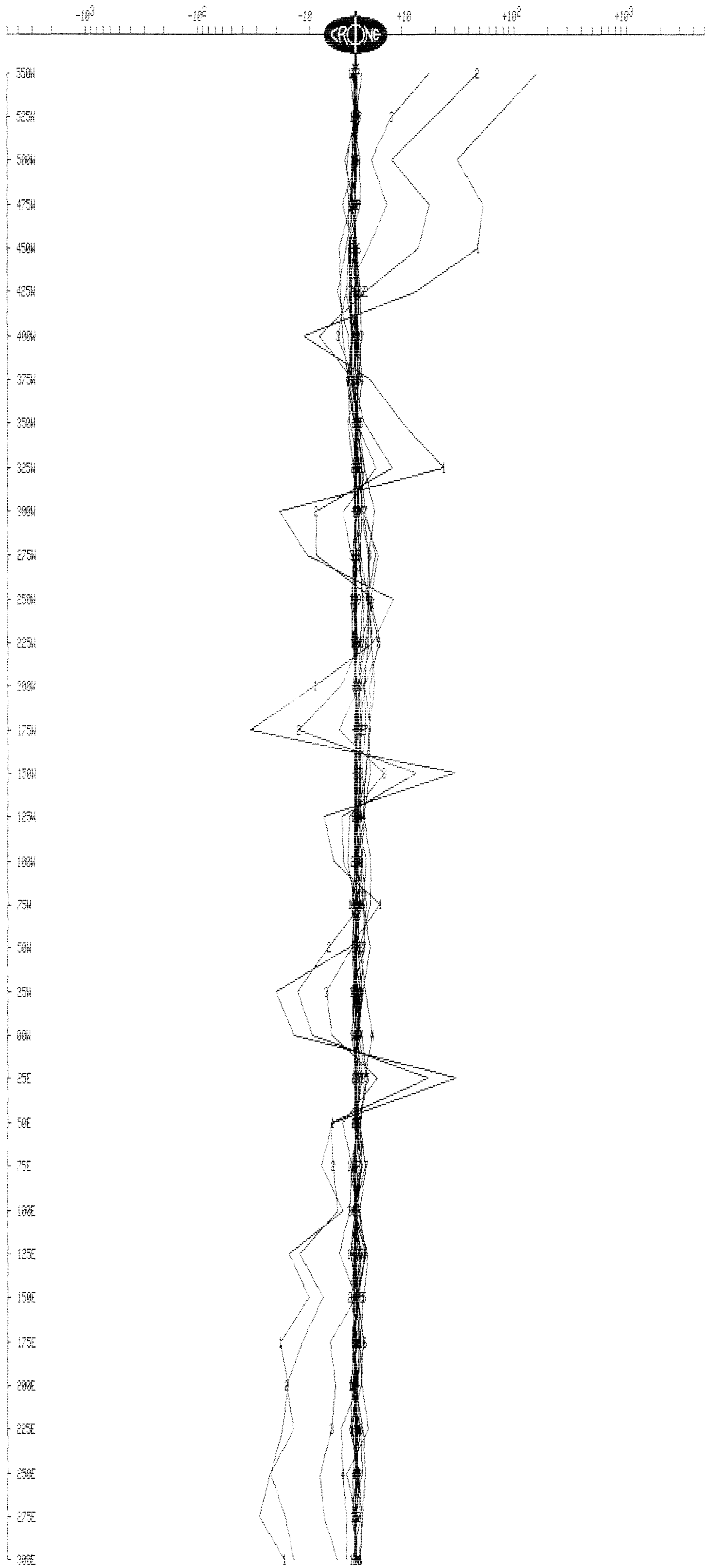


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 7, 1999

Line : 1000N
Tx Loop : LOOP2W
File name : L1000NL2.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



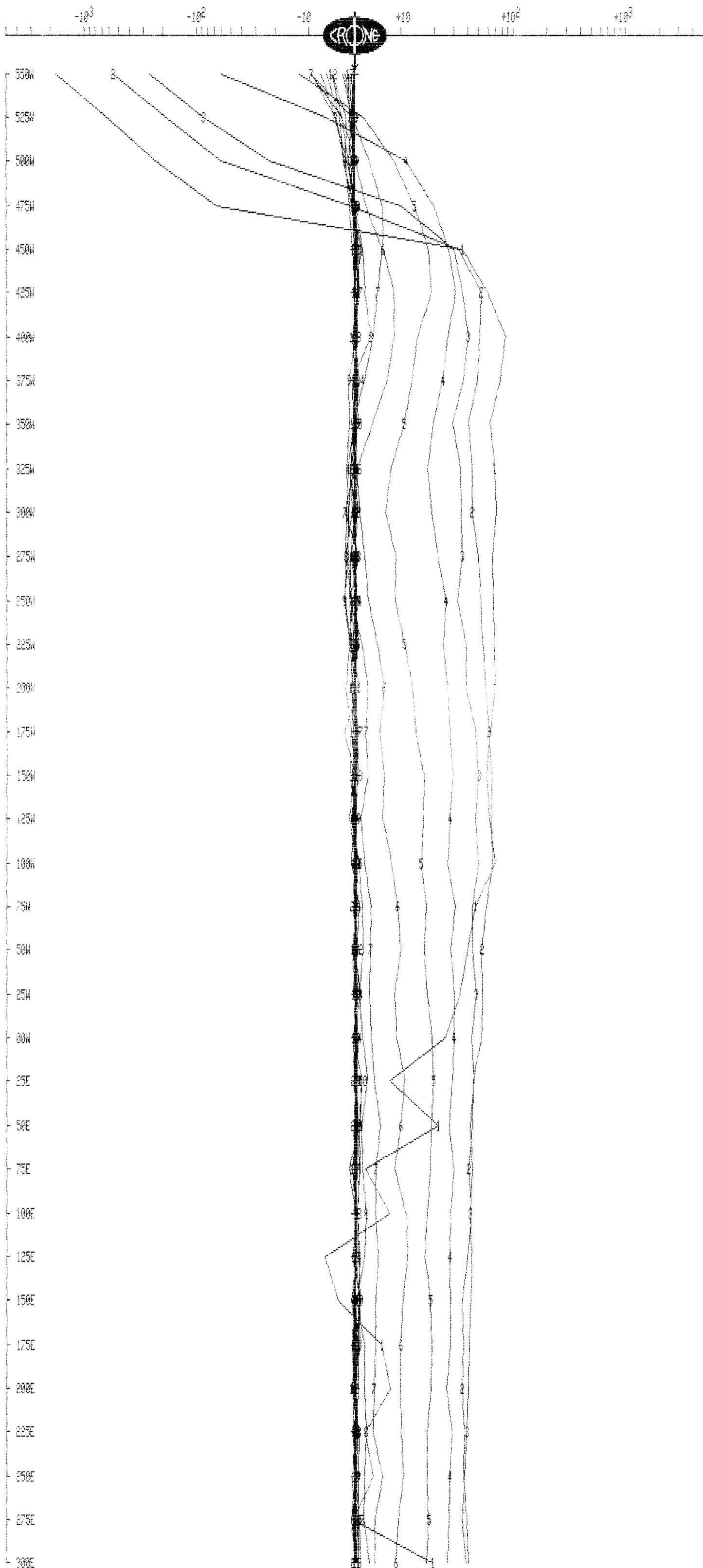
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 7, 1999

Line : 1000N
Tx Loop : LOOP2W
File name : L1000NL2.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500

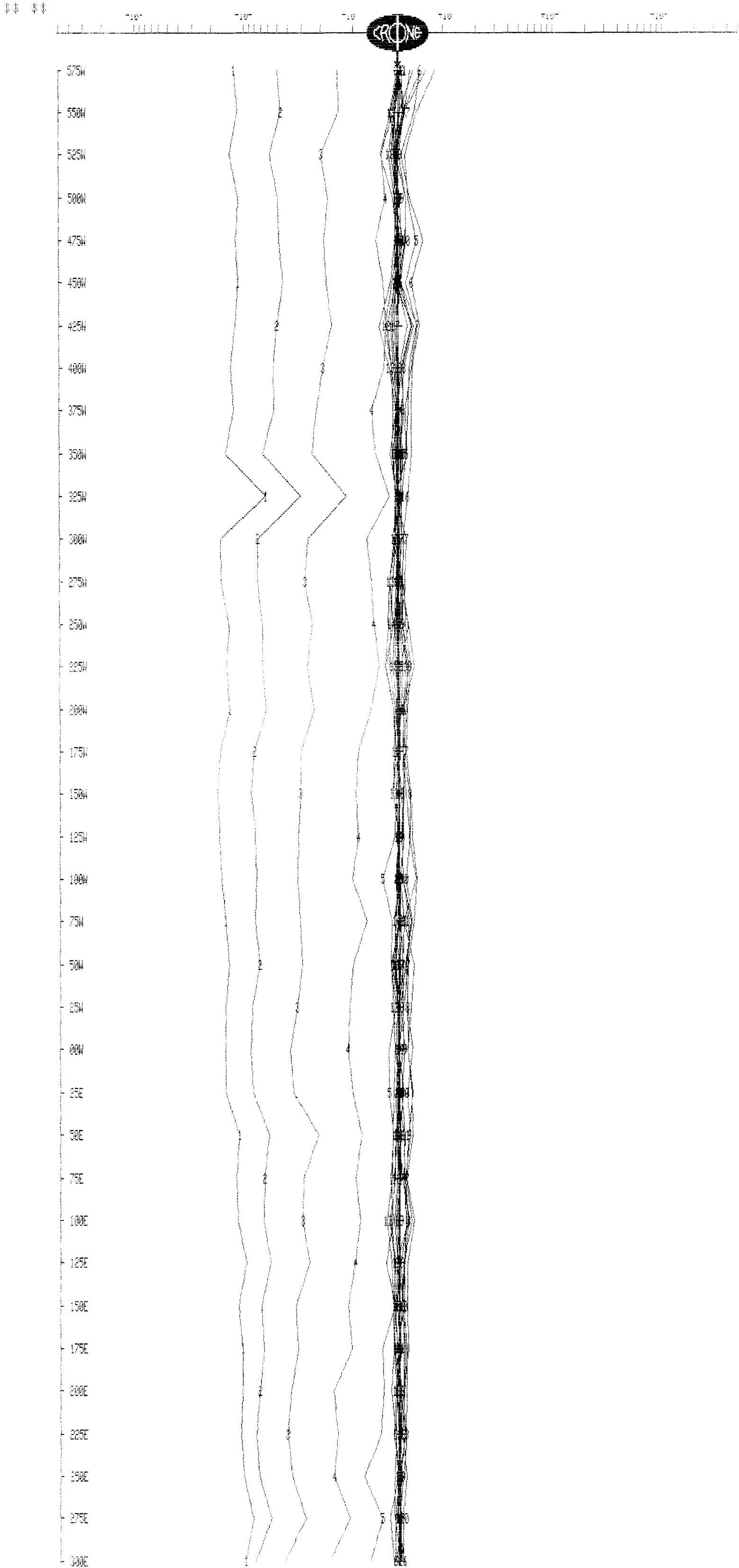


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 8, 1999

Line : 1400N
Tx Loop : LOOP2W
File name : L1400NL2.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500

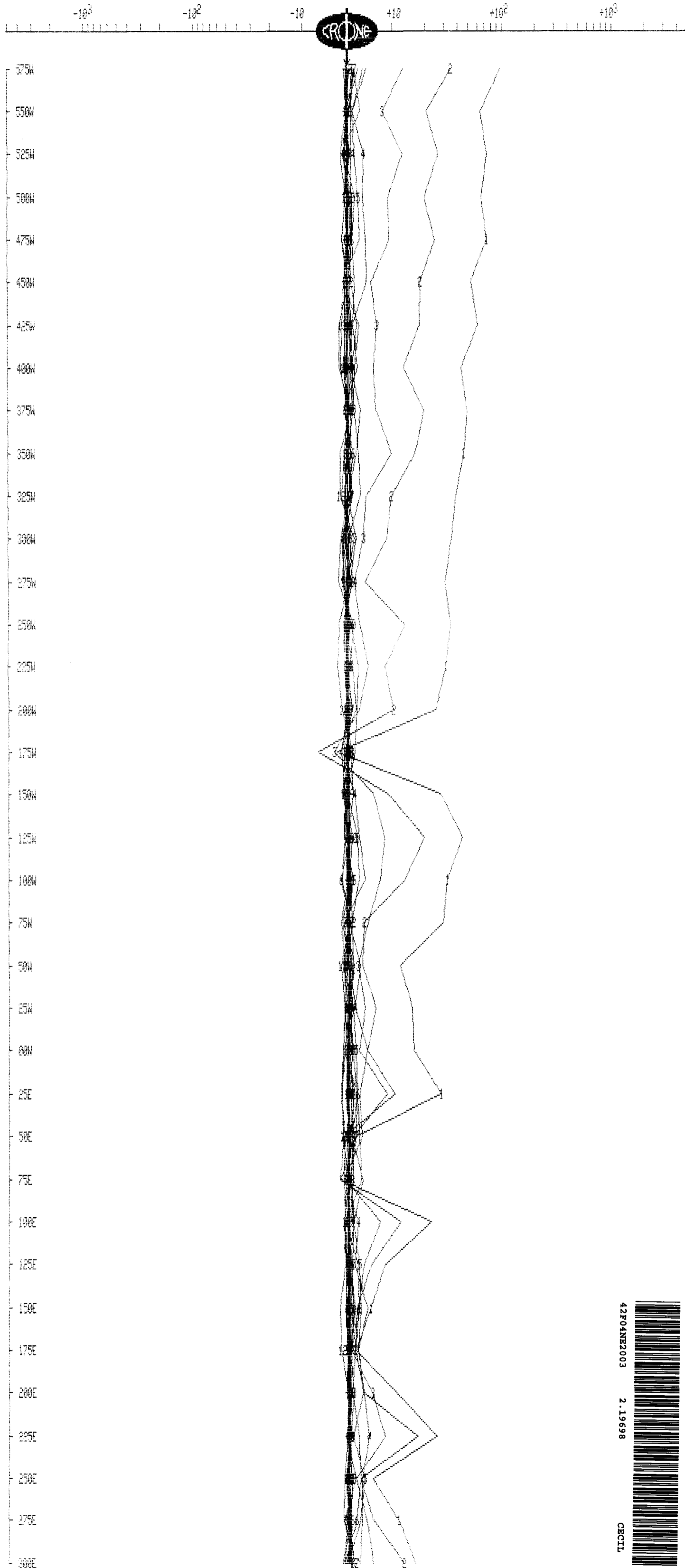


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 8, 1999

Line : 1400N
Tx Loop : LOOP2W
File name : L1400NL2.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



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CXCITL 330

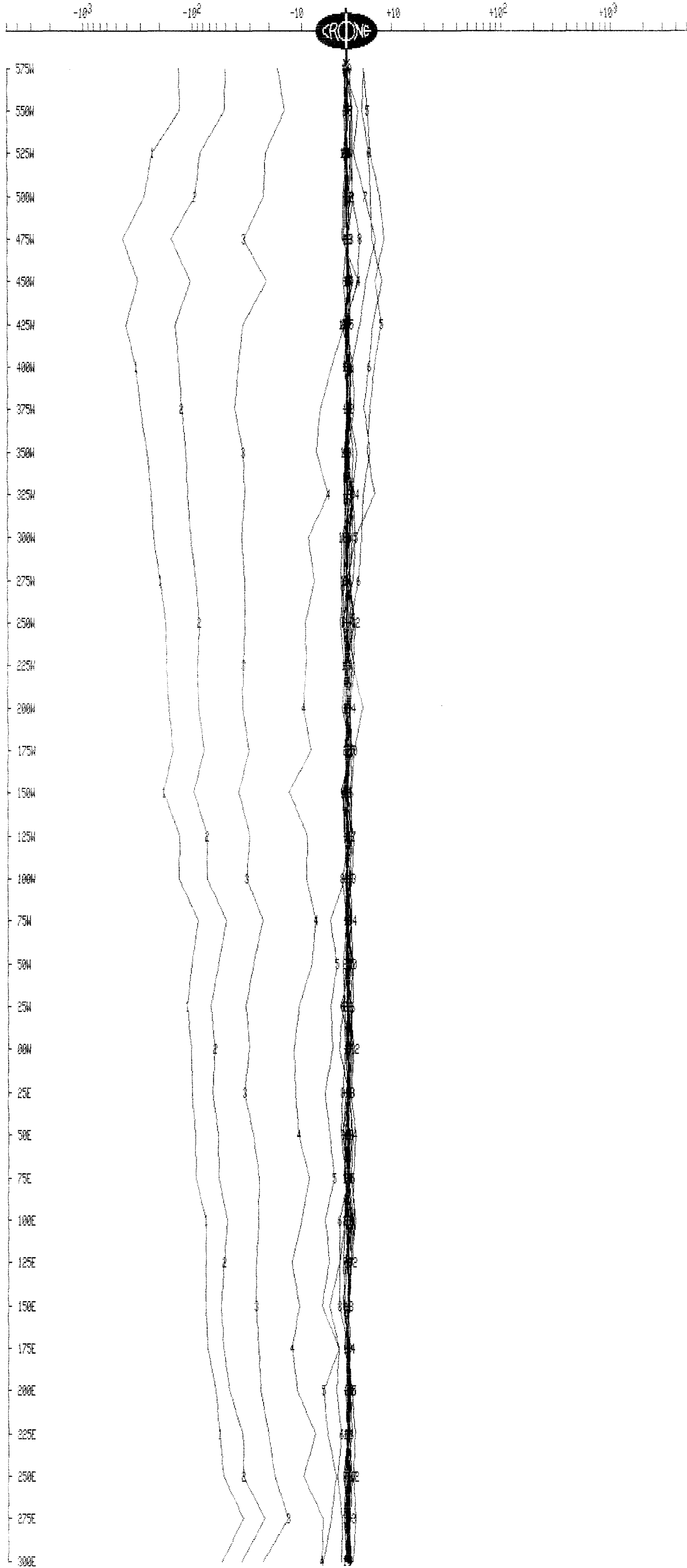


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 4, 1999

Line : 400N
Tx Loop : LOOP2W
File name : L400NL2W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500

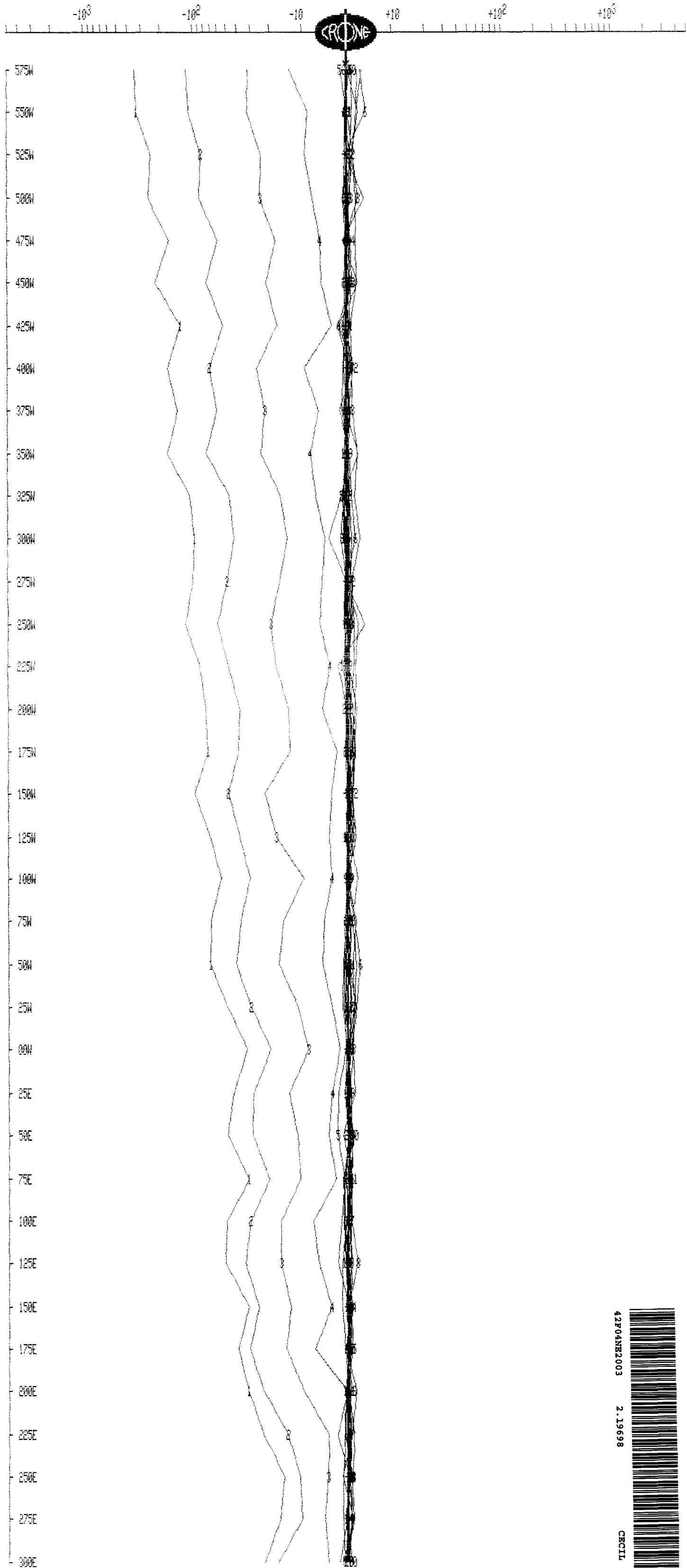


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 4, 1999

Line : 400N
Tx Loop : LOOP2W
File name : L400NL2W.PEM

CROSS-LINE HORIZONTAL COMPONENT dB/dt nanoTesla/sec - 21 channels
Scale: 1:2500



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CSCITL 360

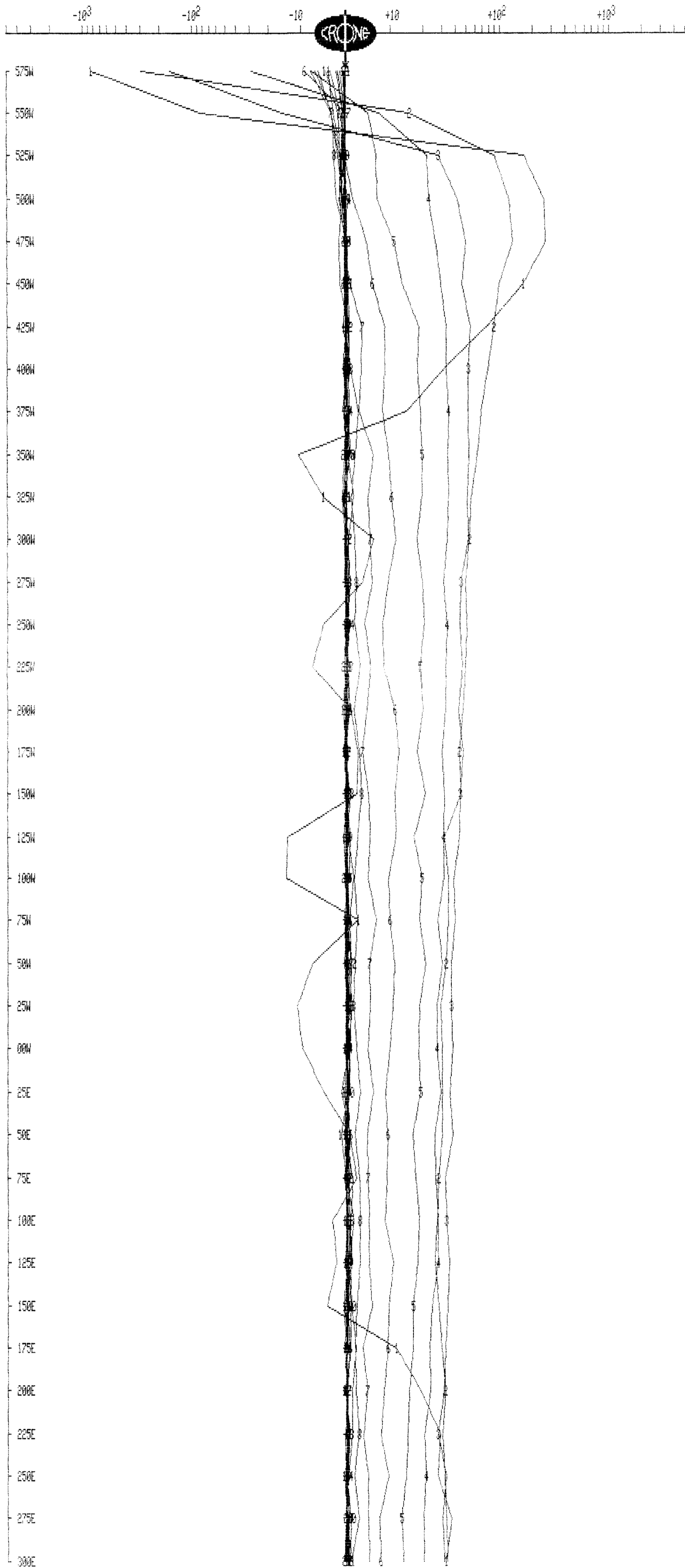
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 4, 1999

Line : 400N
Tx Loop : LOOP2W
File name : L400NL2W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500

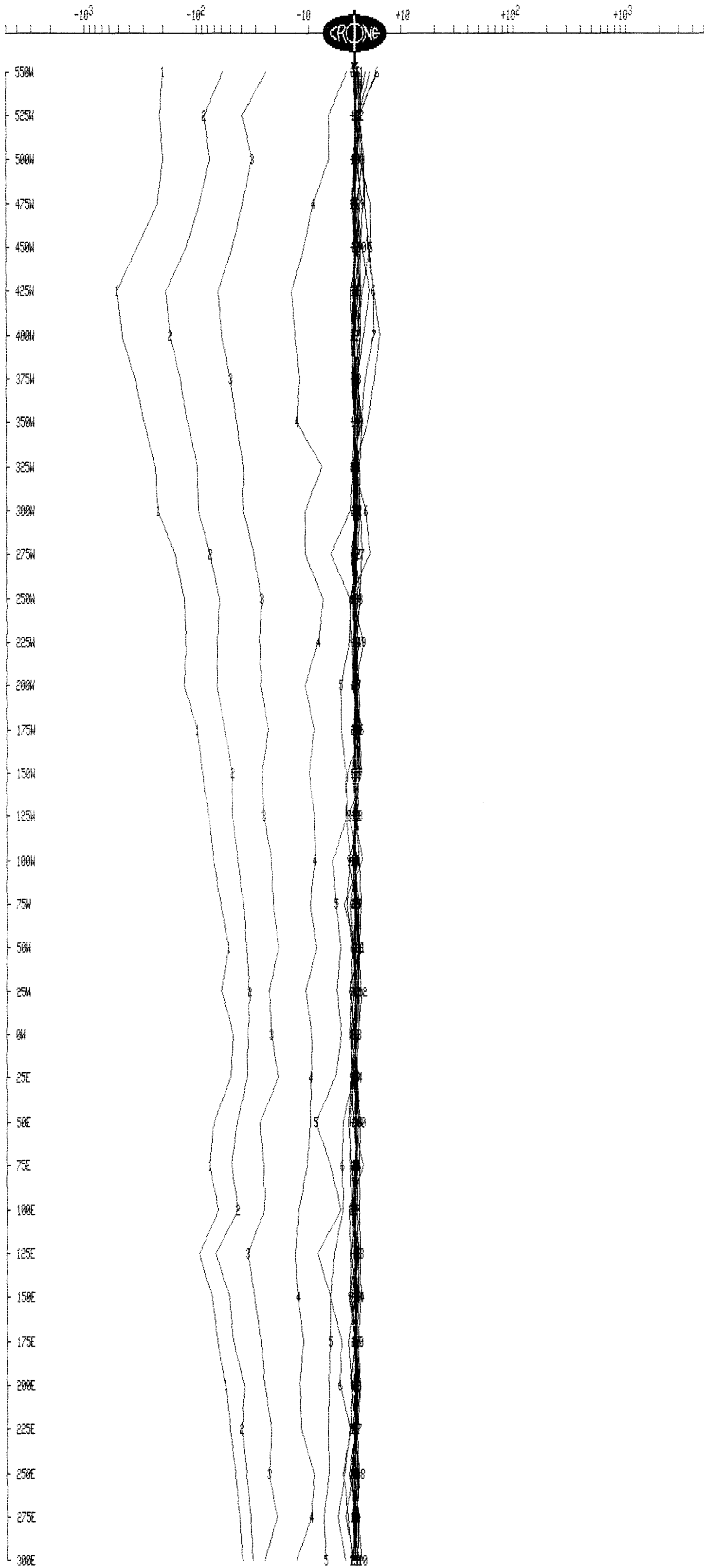


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 2, 1999

Line : 00N
Tx Loop : LOOP1W
File name : LONL1W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500



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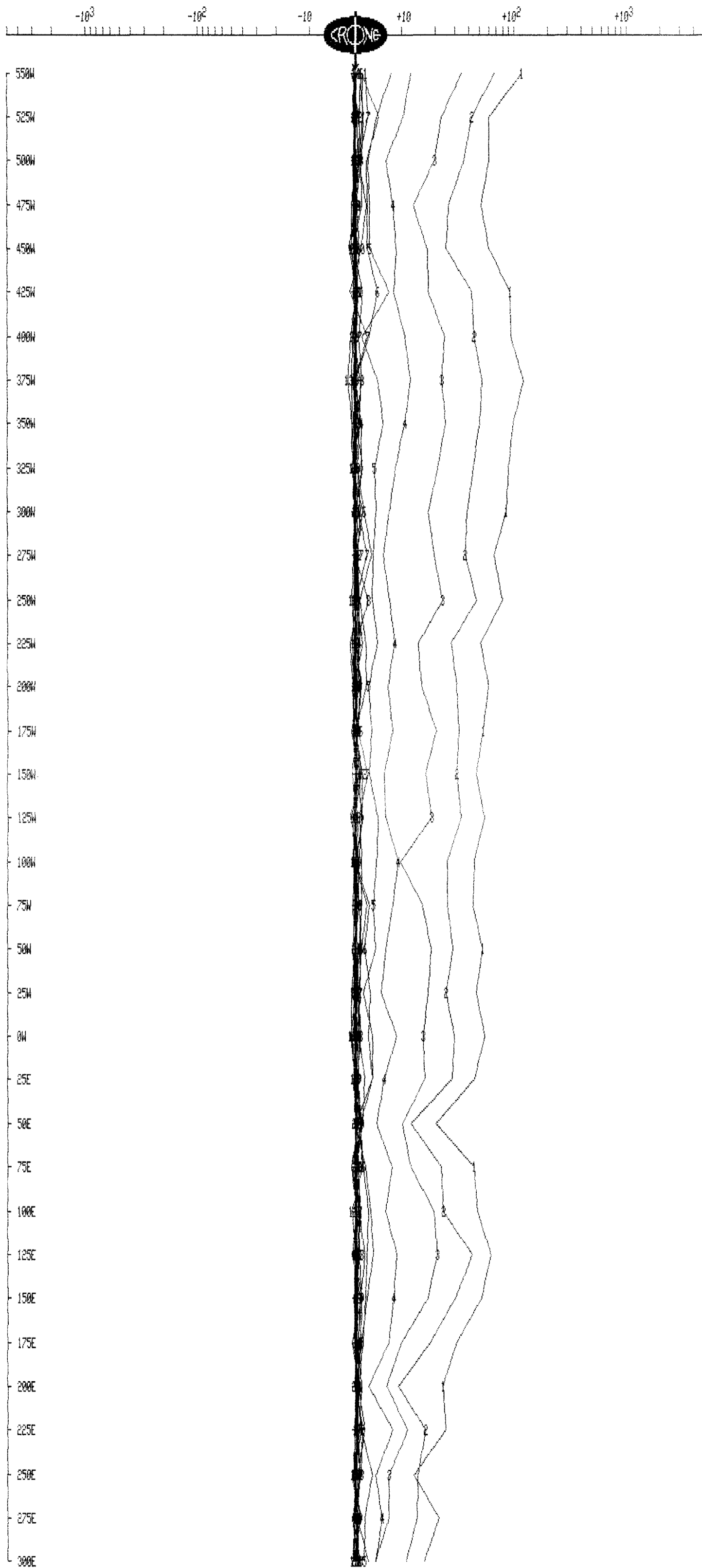
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 2, 1999

Line : 00N
Tx Loop : LOOP1W
File name : LONL1W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels

Scale: 1:2500



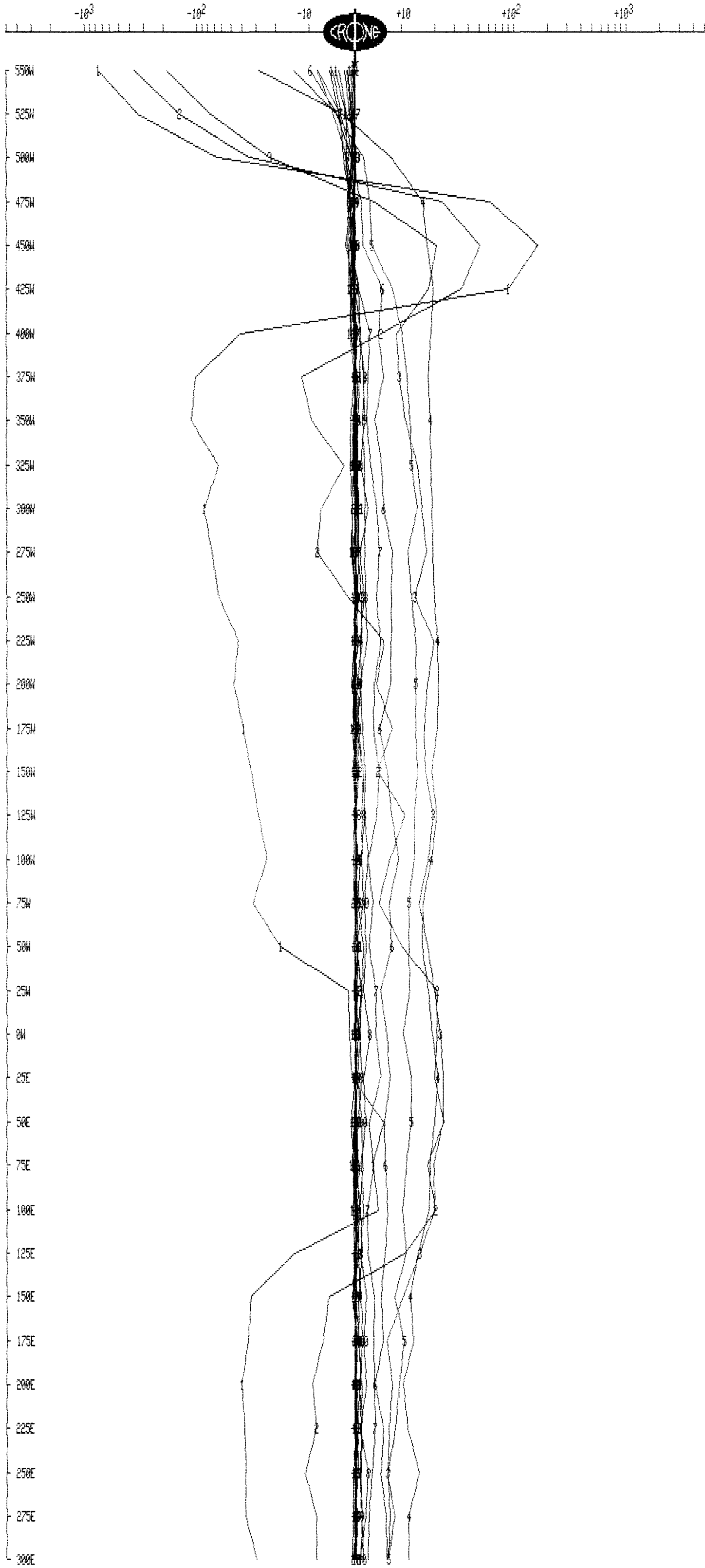
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 2, 1999

Line : 00N
Tx Loop : LOOP1W
File name : L0NL1W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500

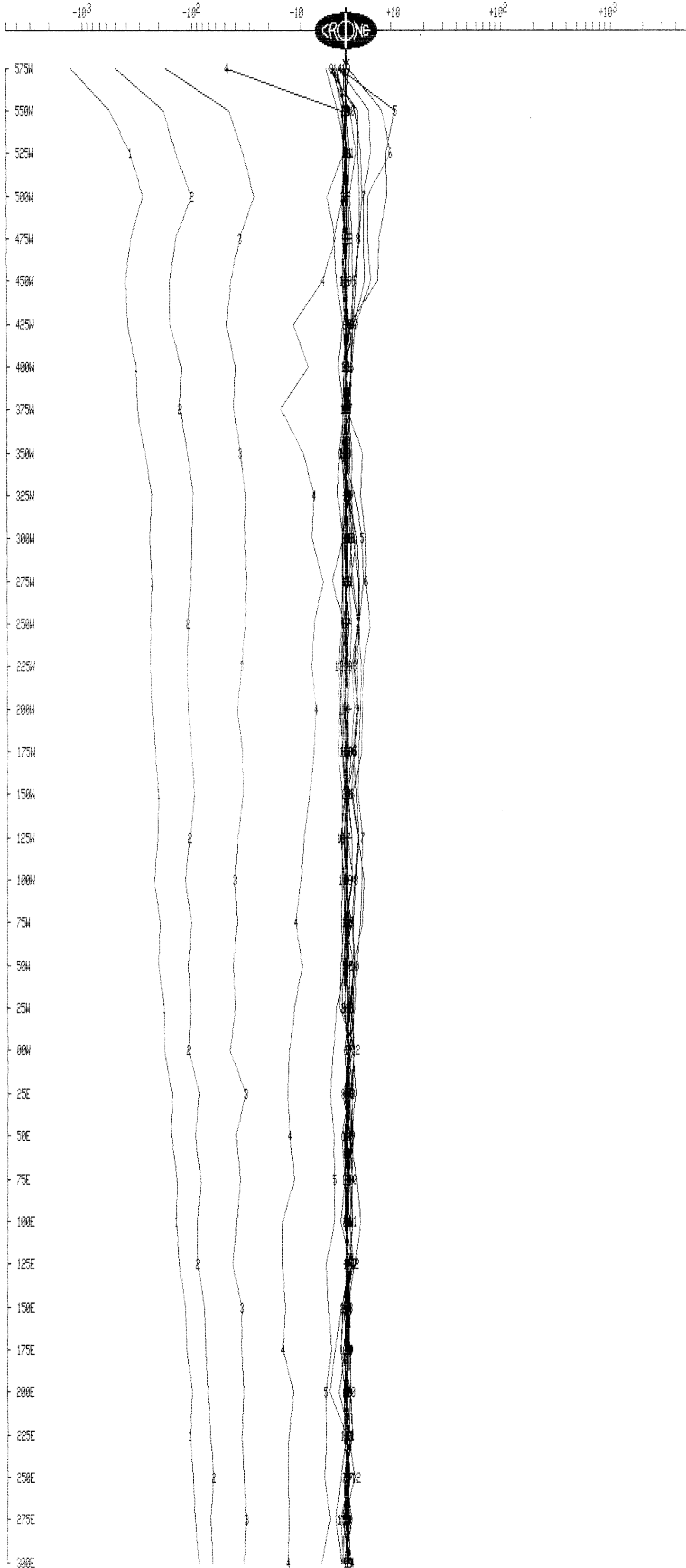


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 5, 1999

Line : 800N
Tx Loop : LOOP2W
File name : L800NL2W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500



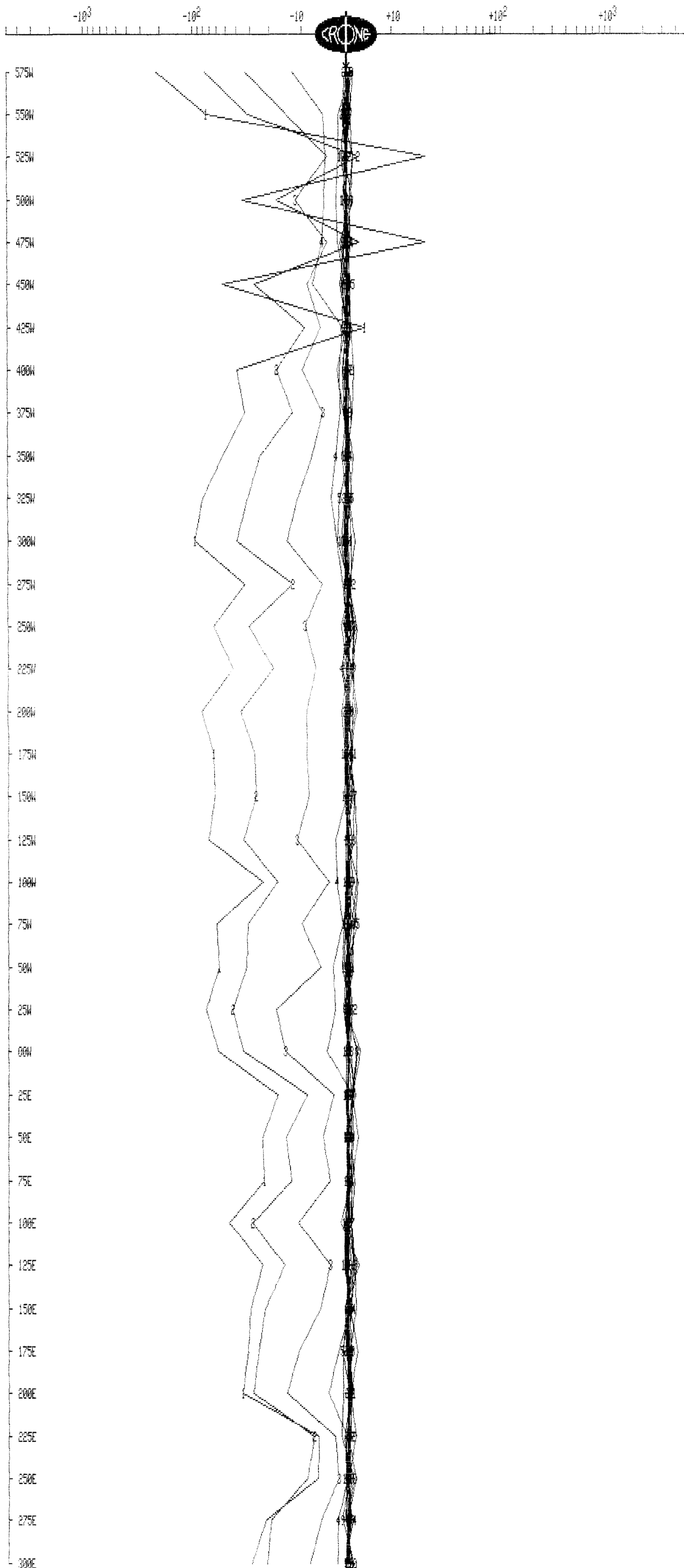
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 5, 1999

Line : 800N
Tx Loop : LOOP2W
File name : L800NL2W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels

Scale: 1:2500



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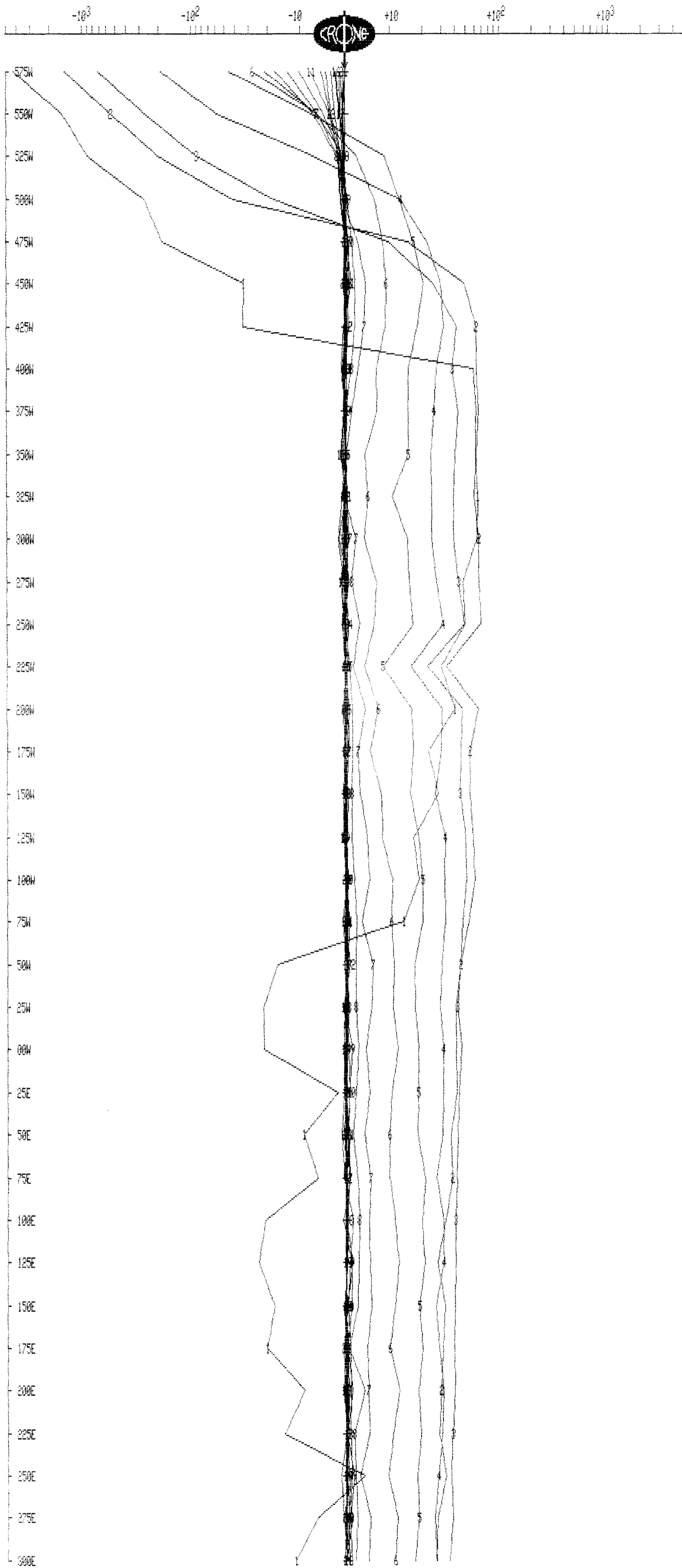
420

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 5, 1999

Line : 800N
Tx Loop : LOOP2W
File name : L800NL2W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels
Scale: 1:2500



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CECIL

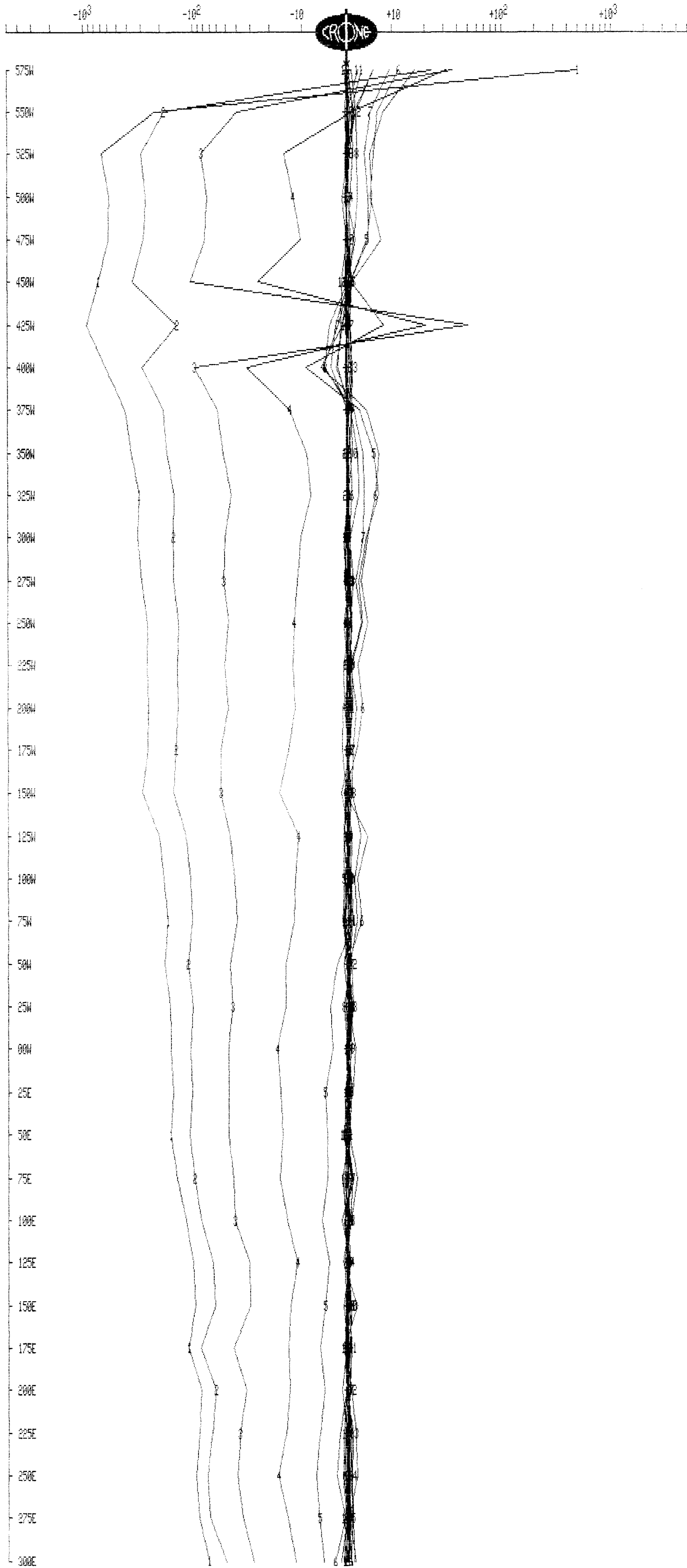
430

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 5, 1999

Line : 600N
Tx Loop : LOOP2W
File name : L600NL2W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500

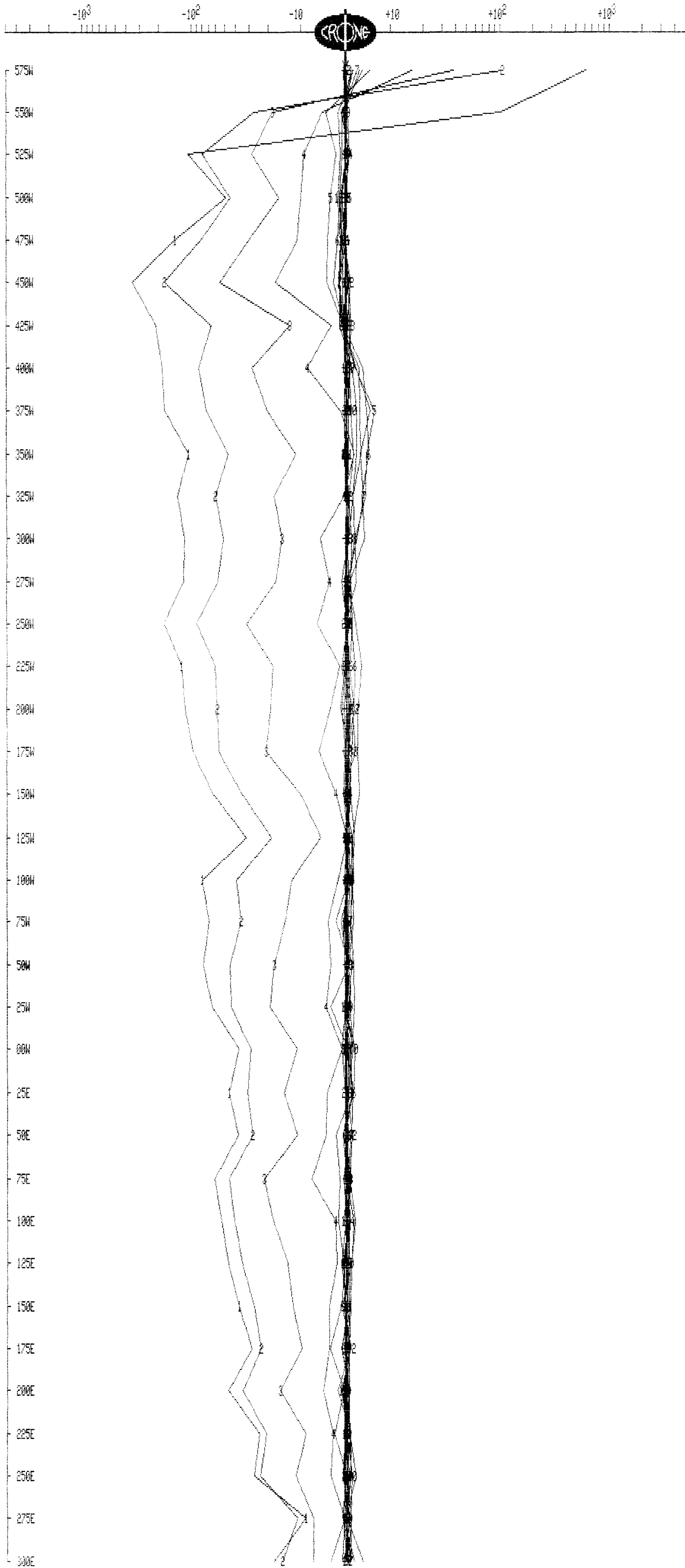


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 5, 1999

Line : 600N
Tx Loop : LOOP2W
File name : L600NL2W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



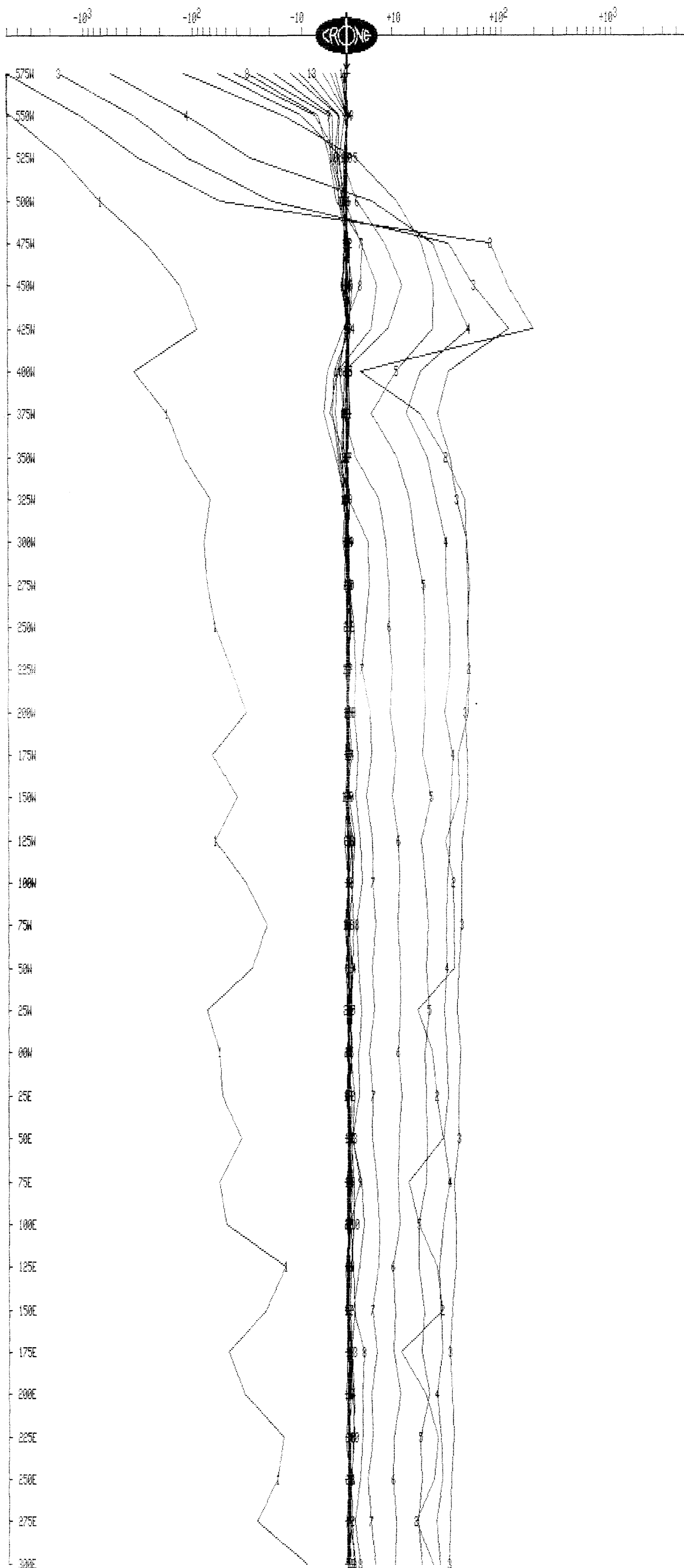
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 5, 1999

Line : 600N
Tx Loop : LOOP2W
File name : L600NL2W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500



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CECIL

460

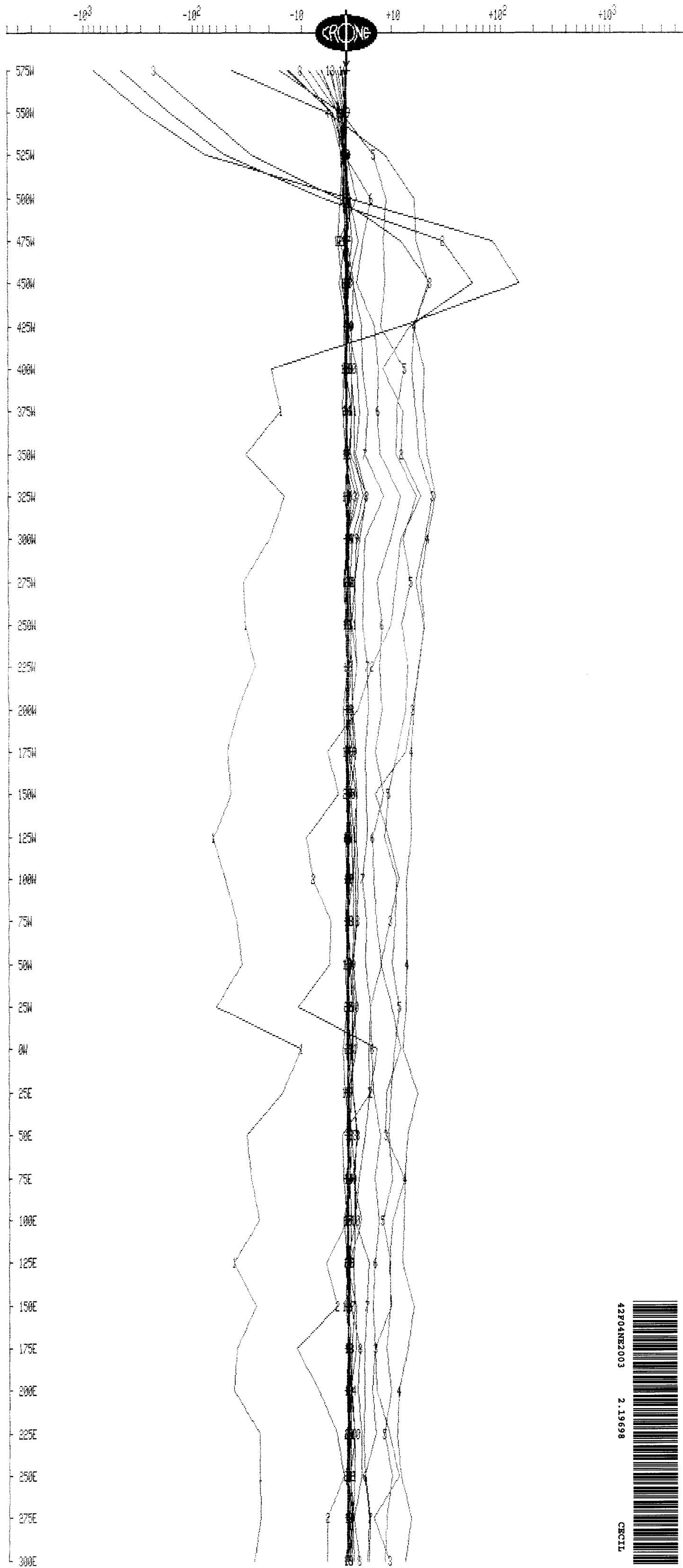
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 1, 1999

Line : 200N
Tx Loop : LOOP1W
File name : L200NL1W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500



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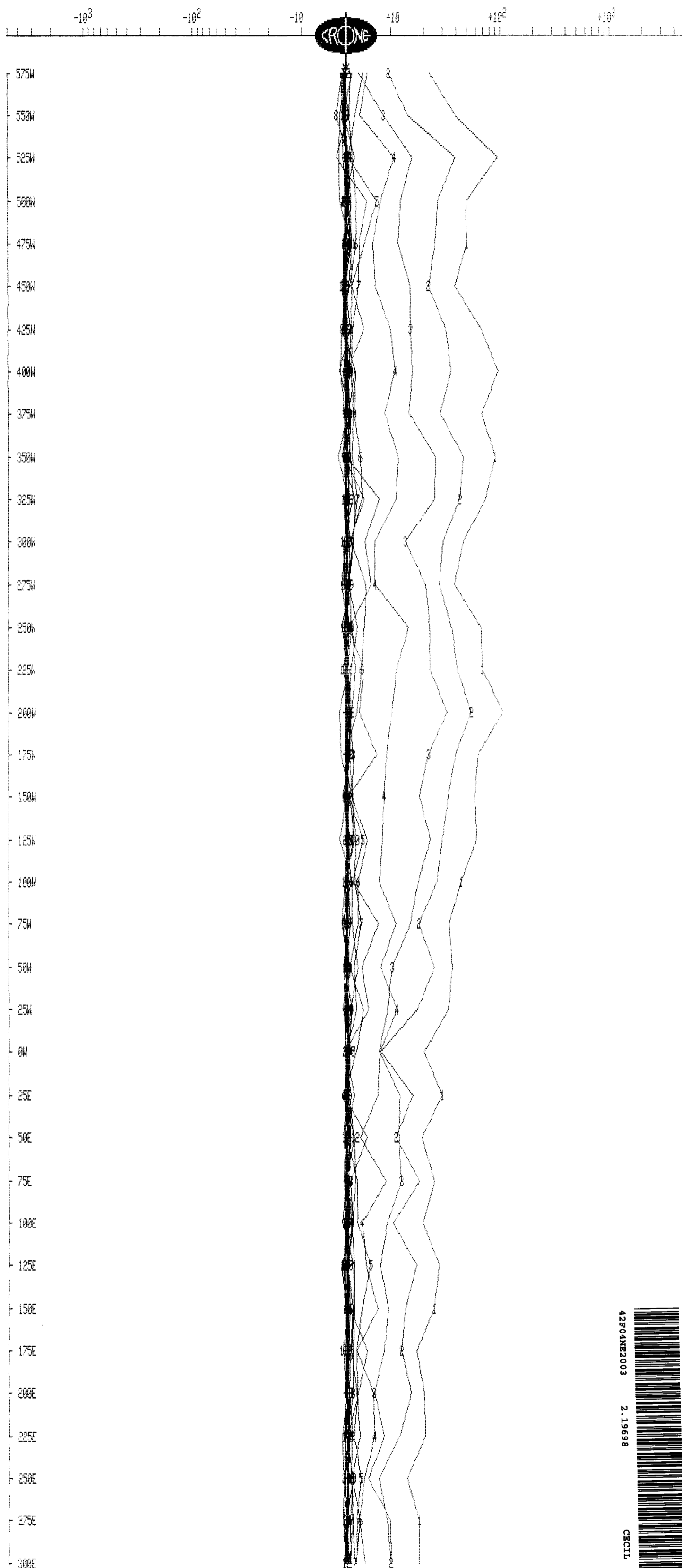


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 1, 1999

Line : 200N
Tx Loop : LOOP1W
File name : L200NL1W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



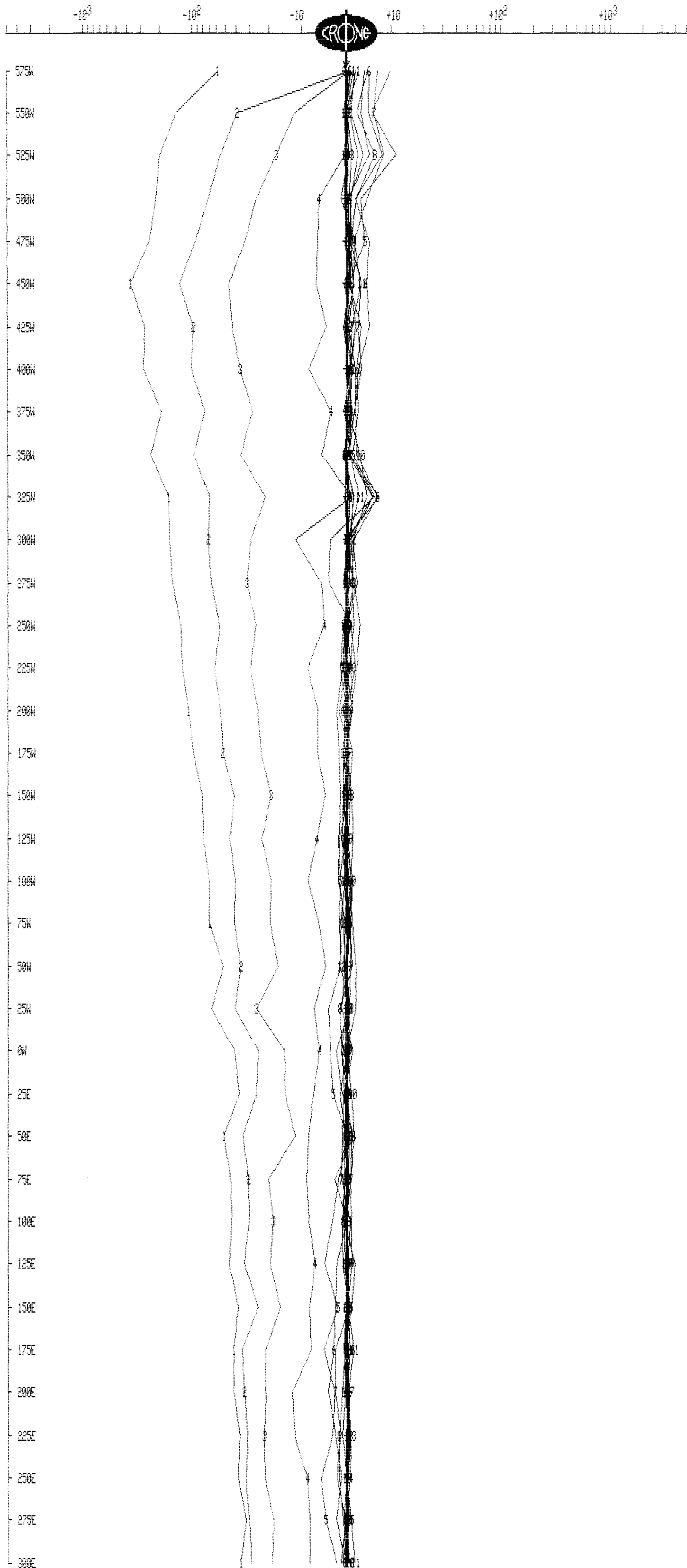
42F04NE2003 2.19698
CECIL 480

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 1, 1999

Line : 200N
Tx Loop : LOOP1W
File name : L200NL1W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500

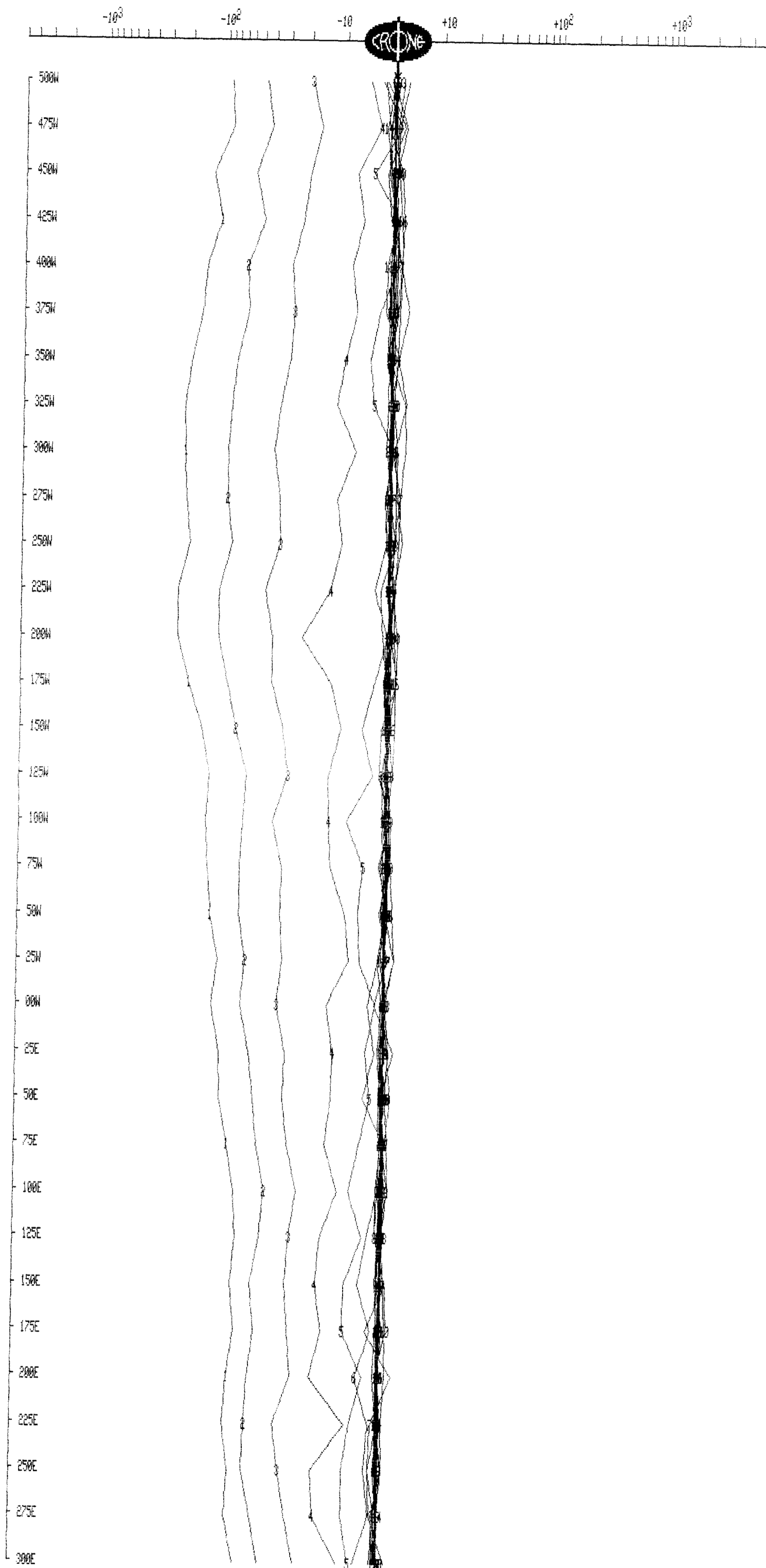


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 3, 1999

Line : 600S
Tx Loop : LOOP1W
File name : L600SL1W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500



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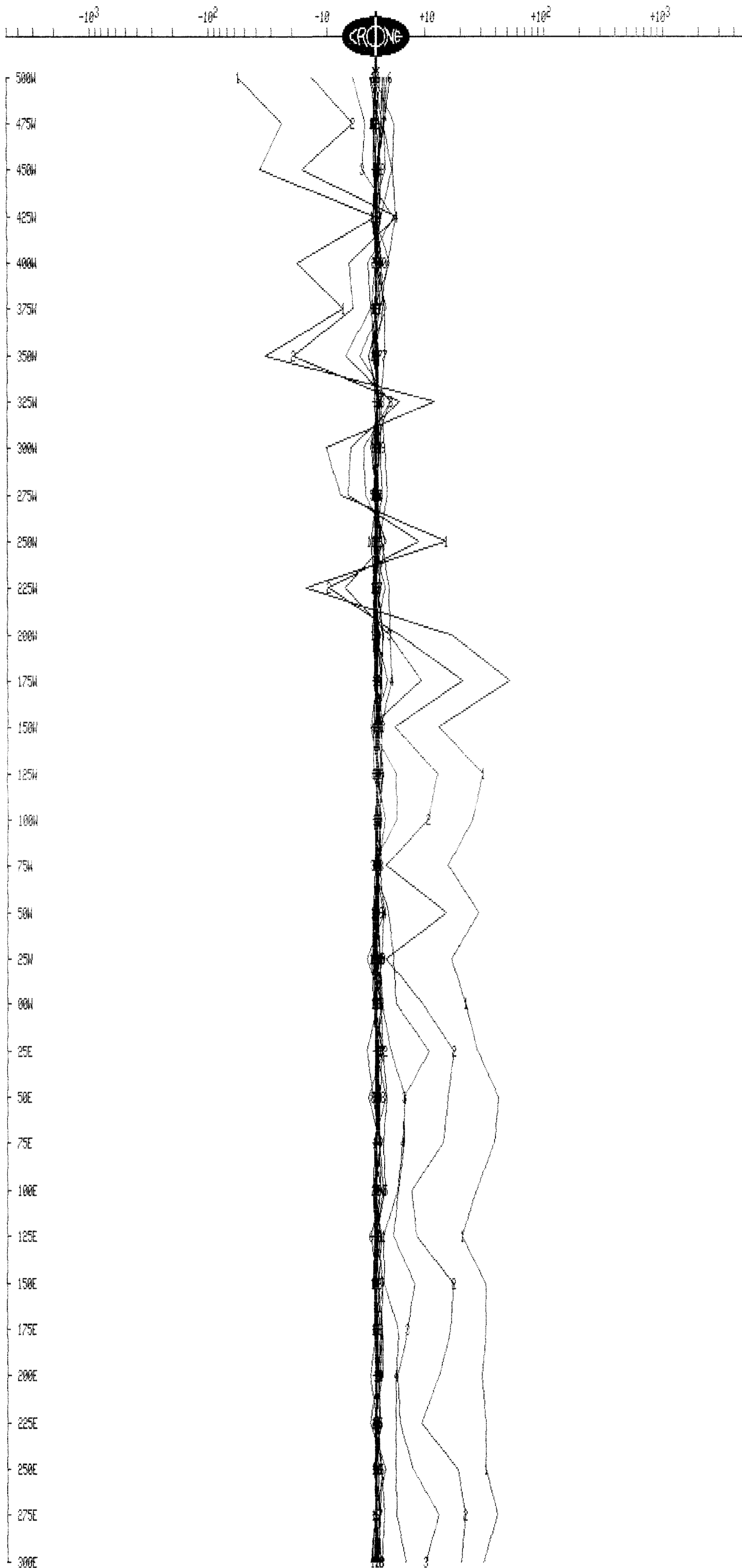
500

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 3, 1999

Line : 600S
Tx Loop : LOOP1W
File name : L600SL1W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500

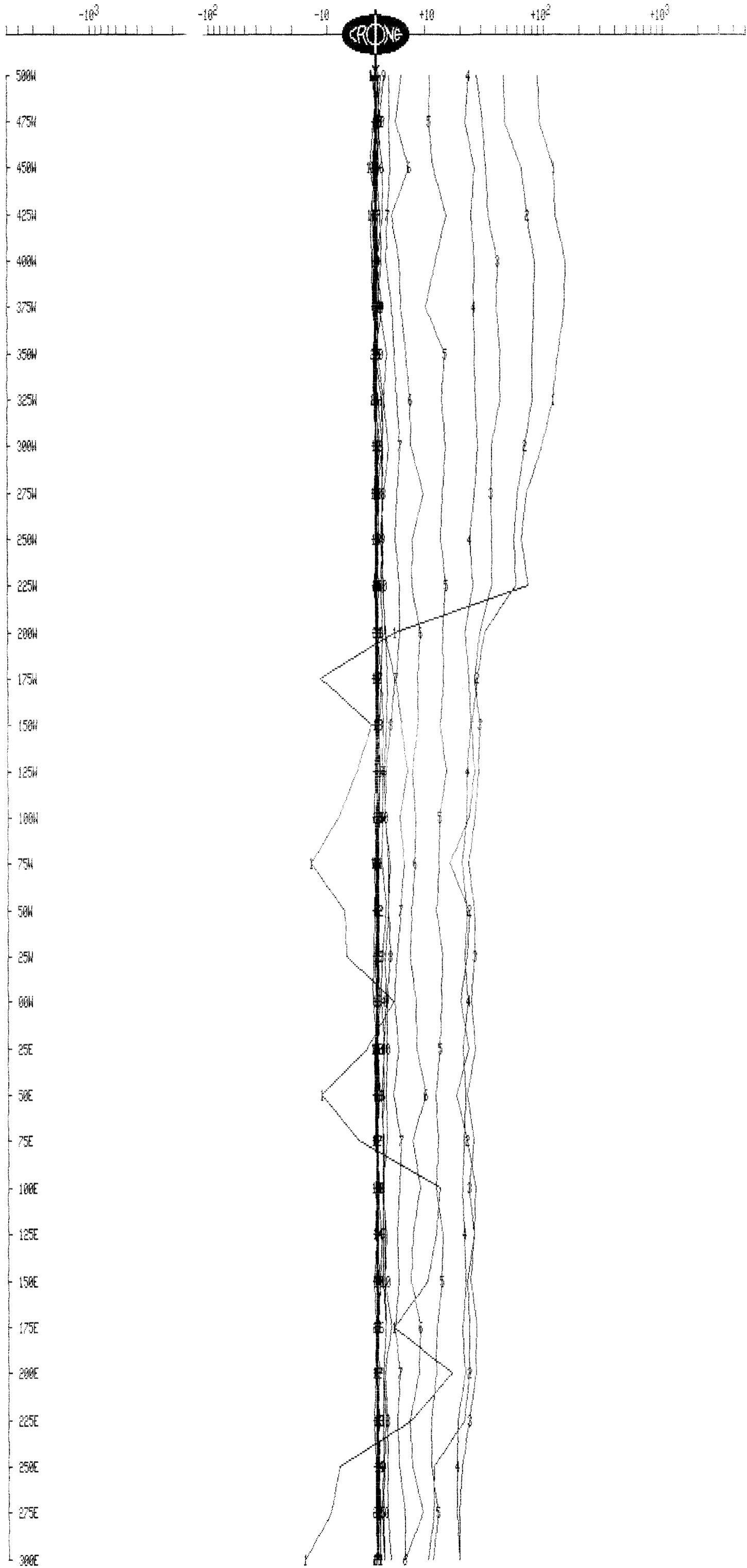


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 3, 1999

Line : 600S
Tx Loop : LOOP1W
File name : L600SL1W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels
Scale: 1:2500

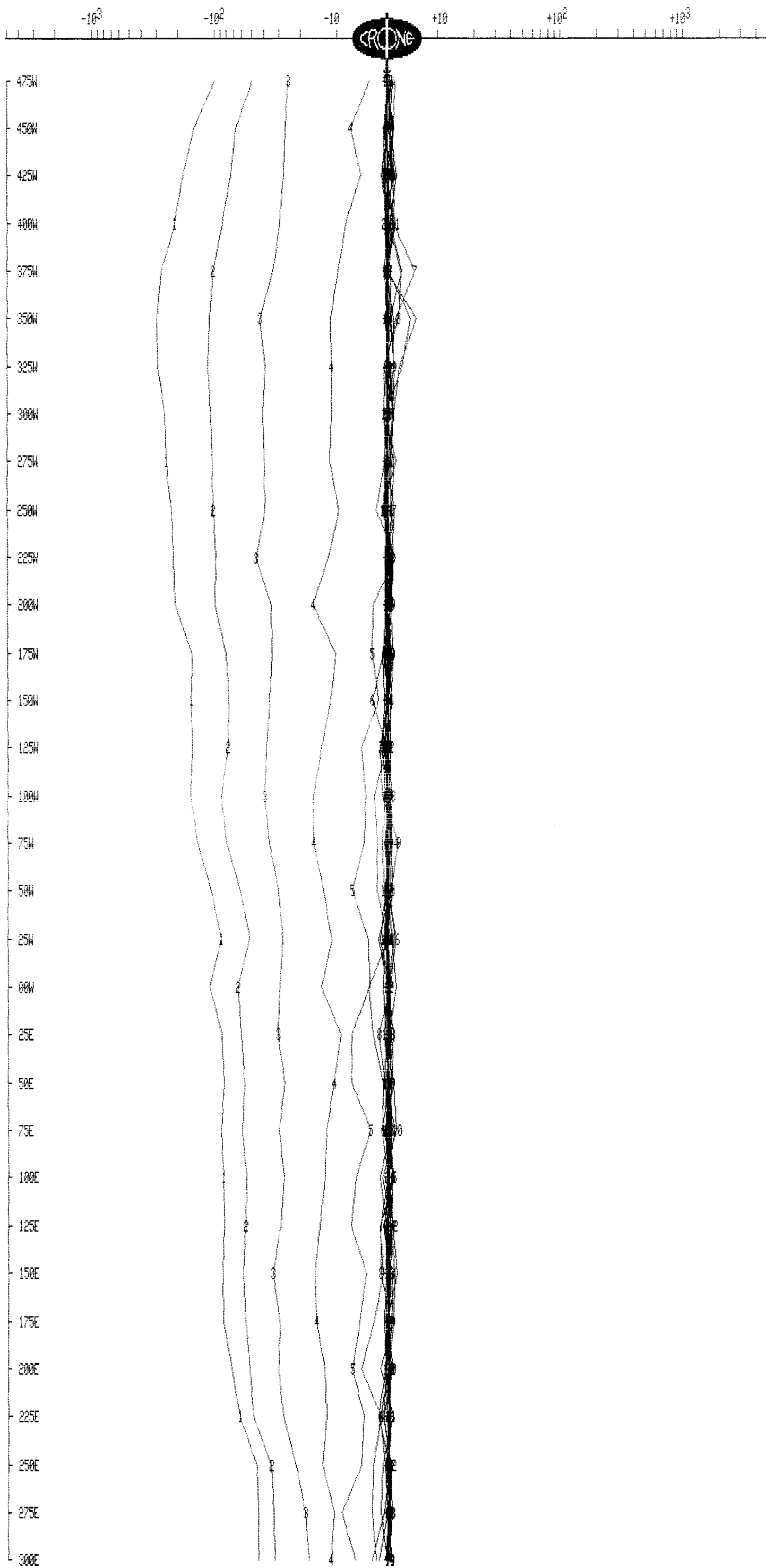


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 3, 1999

Line : 400S
Tx Loop : LOOP1W
File name : L400SL1W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500



42F04NE2003

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CECIL

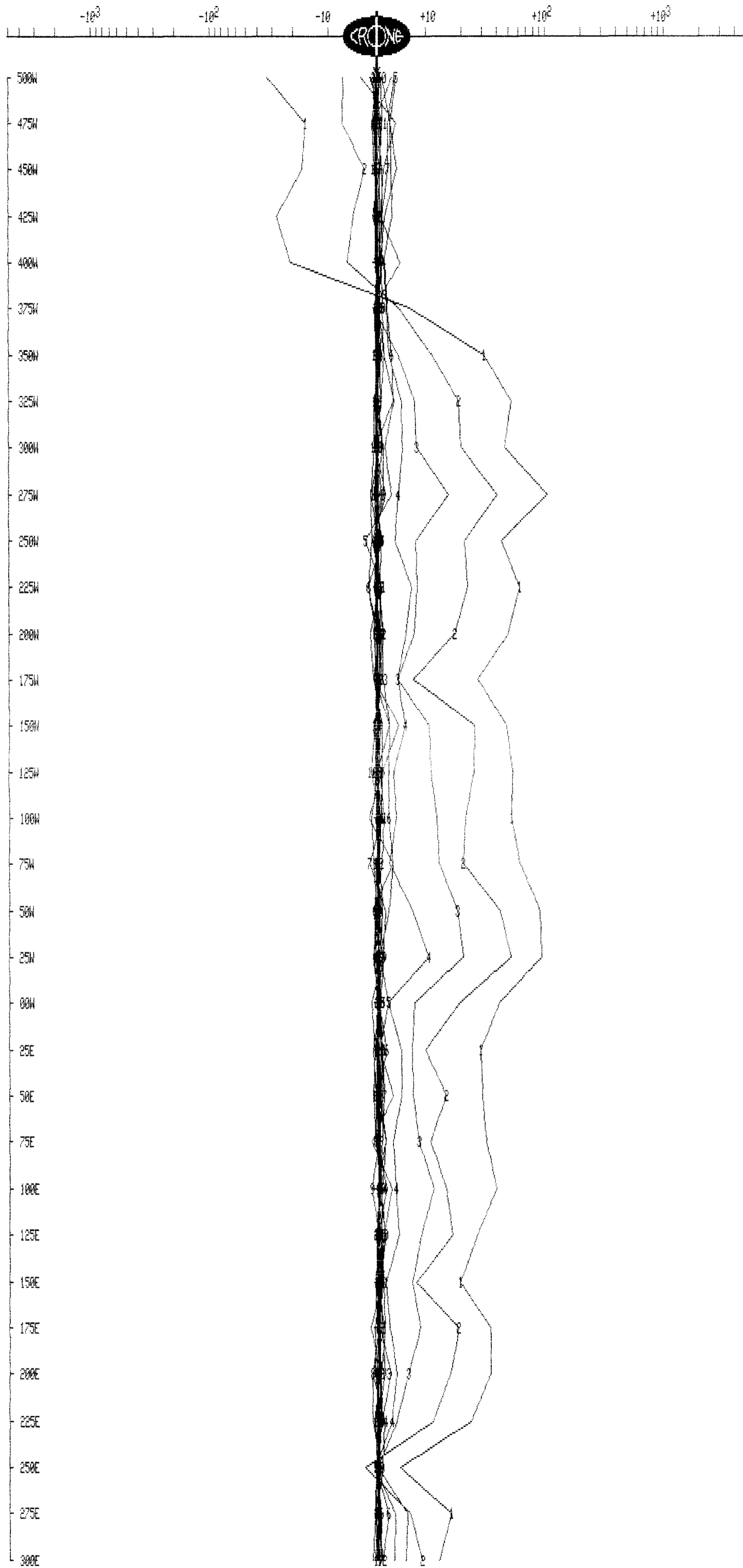
530

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 3, 1999

Line : 400S
Tx Loop : LOOP1W
File name : L400SL1W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



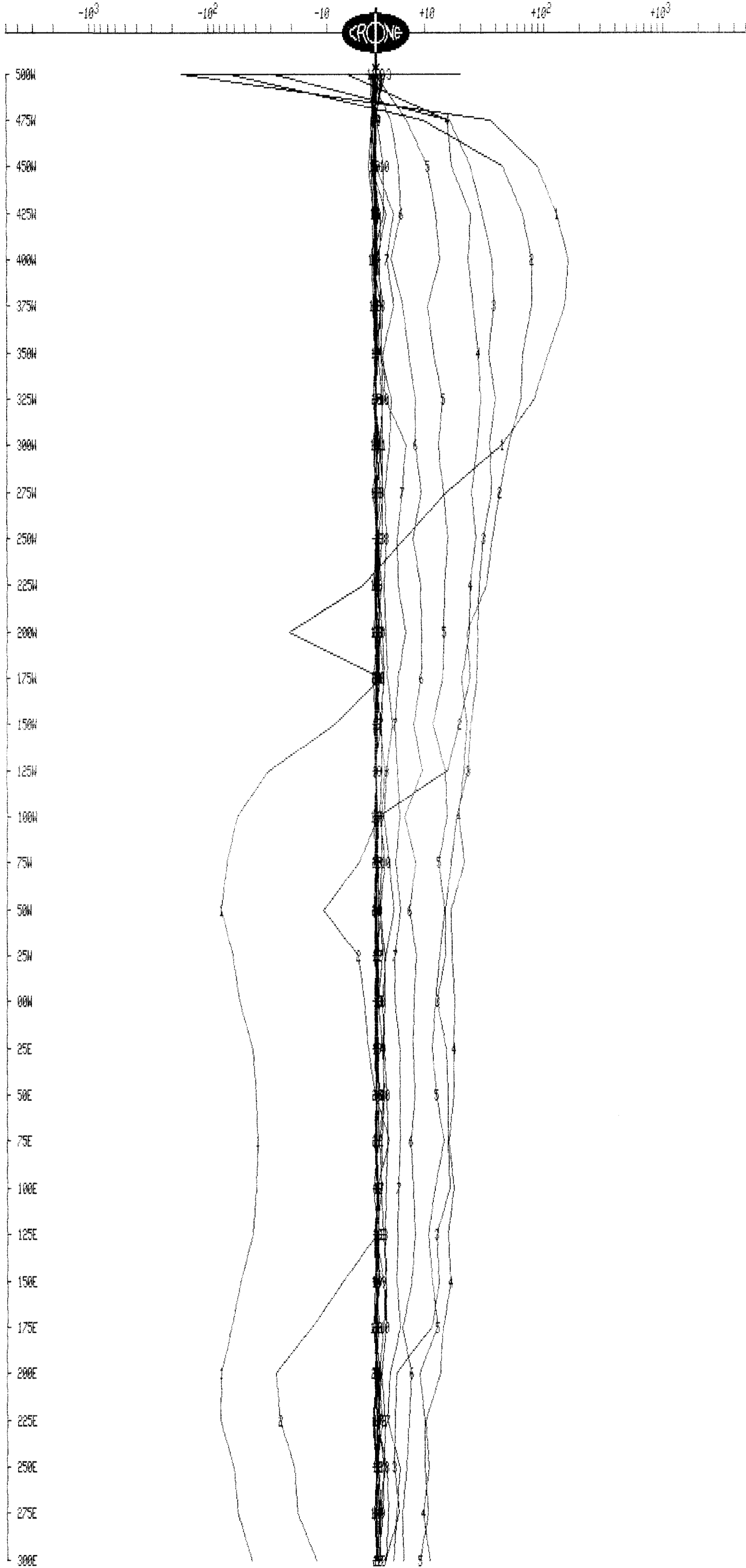
NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 3, 1999

Line : 400S
Tx Loop : LOOP1W
File name : L400SL1W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500

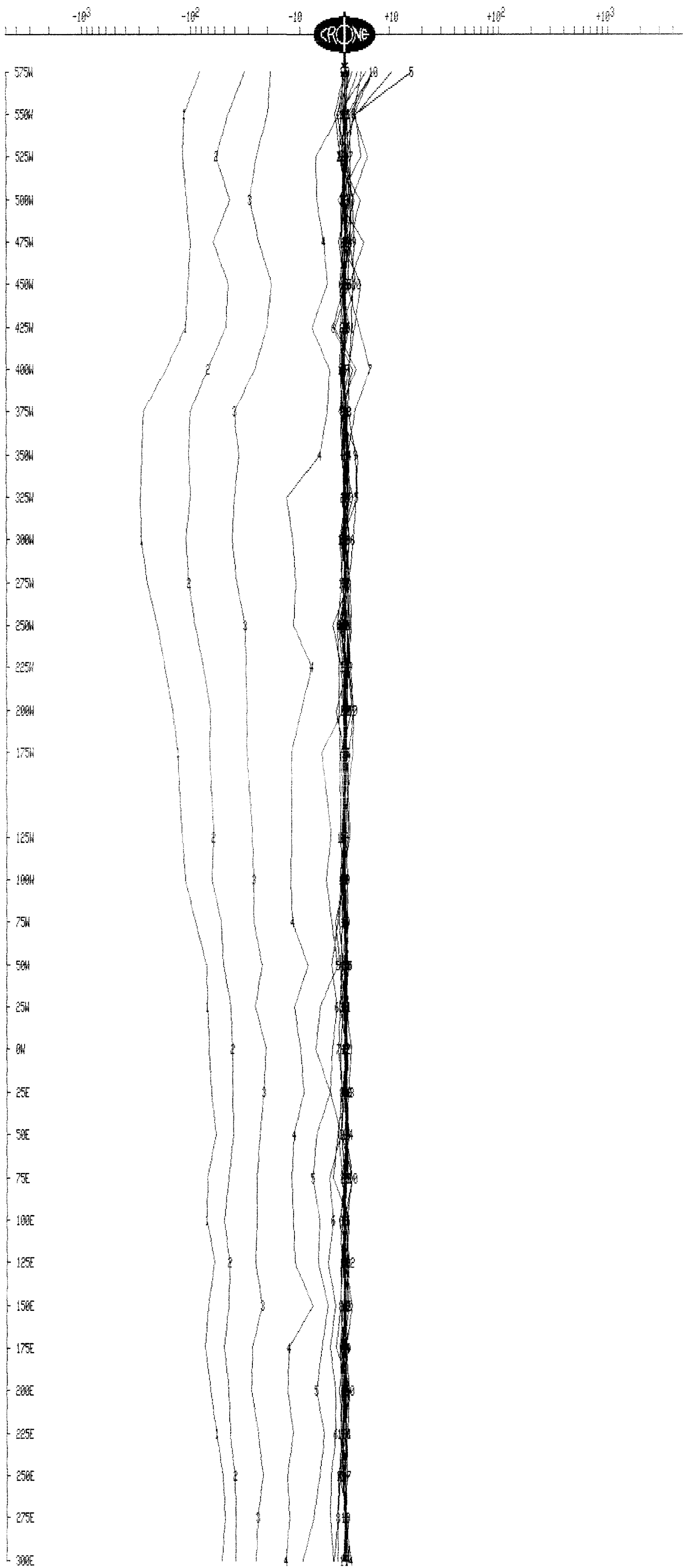


NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 2, 1999

Line : 200S
Tx Loop : LOOP1W
File name : L200SL1W.PEM

IN-LINE HORIZONTAL COMPONENT dBx/dt nanoTesla/sec - 21 channels
Scale: 1:2500



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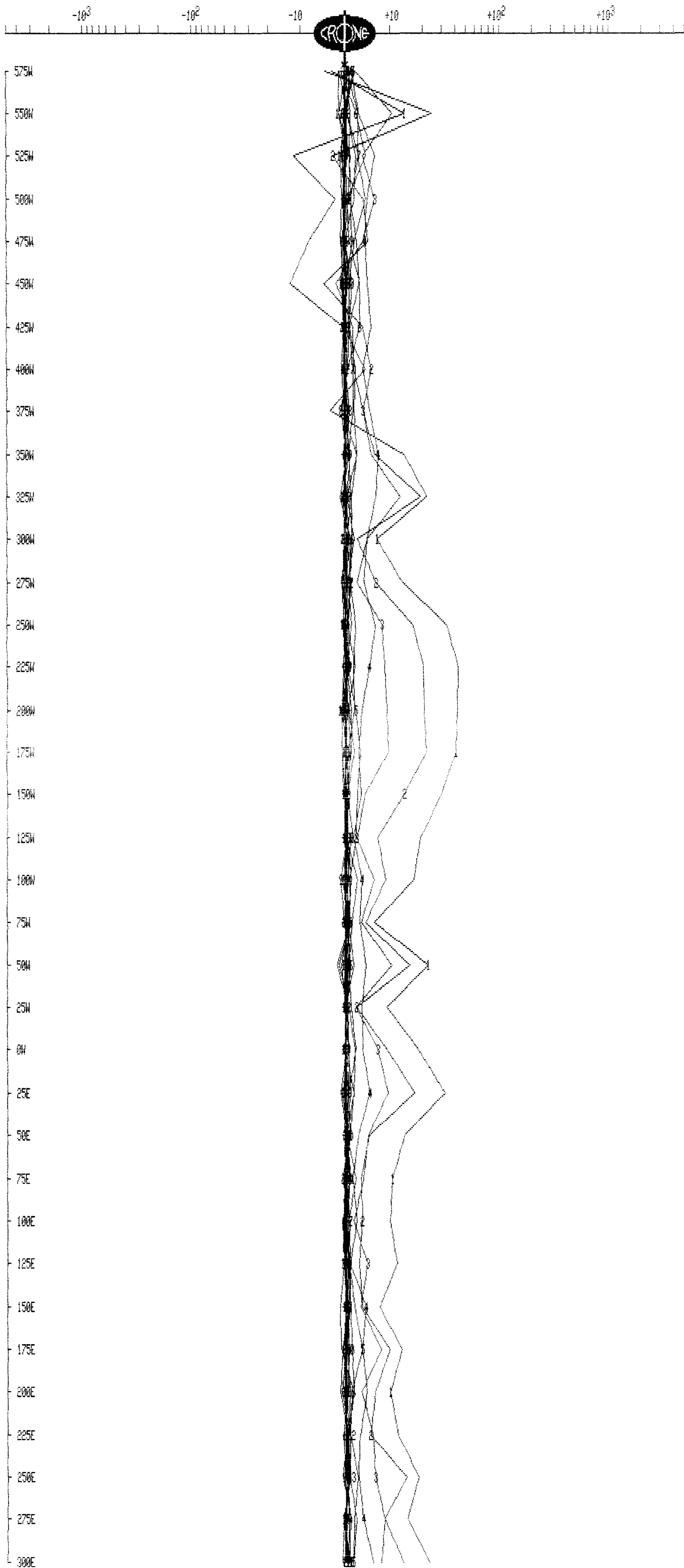
560

NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : FARIES
Date : Mar 2, 1999

Line : 200S
Tx Loop : LOOP1W
File name : L200SL1W.PEM

CROSS-LINE HORIZONTAL COMPONENT dBy/dt nanoTesla/sec - 21 channels
Scale: 1:2500



NORANDA EXPLORATION Co. Ltd.
SURFACE PEM

Client : NORANDA
Grid : F/ARIES
Date : Mar 2, 1999

Line : 200S
Tx Loop : LOOP1W
File name : L200SL1W.PEM

VERTICAL COMPONENT dBz/dt nanoTesla/sec - 21 channels

Scale: 1:2500

