ARIS SUMMARY SHEET

District Geologist, Victoria Off Confidential: 89.03.07

ASSESSMENT REPORT 17186 MINING DIVISION: Victoria

PROPERTY: Saltspring Island
LOCATION: LAT 48 45 13 LONG 123 28 09
UTM 10 5399953 465513
NTS 092B14W 092B11W
CLAIM(S): Salt 1,Bruce 1-2,Musgrave II
OPERATOR(S): Kidd Creek Mines
AUTHOR(S): Hendrickson, G.A.
REPORT YEAR: 1988, 14 Pages
COMMODITIES
SEARCHED FOR: Gold,Iron,Manganese
GEOLOGICAL
SUMMARY: The claims are underlain by Paleozoic Sicker Group Myra Formation rocks.
WORK
DONE: Geophysical,Physical
IPOL 20.0 km
Map(s) - 6; Scale(s) - 1:5000
TOPO 3600.0 ha
Map(s) - 4; Scale(s) - 1:5000
RELATED
REPORTS: 13375,13996
MINFILE: 092B 074

GEOPHYSICAL REPORT

ON THE

SALTSPRING PROJECT

VICTORIA MINING DISTRICT, B.C.

NTS SHEETS 92B/14W

LAT. 48 45'N, LONG. 123 30'W.

BY

DELTA GEOSCIENCE LTD.

MARCH 8, 1988.

G.A. HENDRICKSON, P.GEOPH.

TABLE OF CONTENTS

INTRODUCTION

This brief report reviews the geophysical exploration work done on the Saltspring Island project during the period February 9 to 18, 1988. Kidd Creek Mines Ltd., a wholly owned subsidiary of Falconbridge Ltd., holds several mineral claims on the southern end of Saltspring Island. These claims cover the Sicker volcanic rocks. Exploration is for volcanogenic massive sulphide deposits. The Sicker volcanic rocks are known to host this type of deposit at several locations on Vancouver Island. Delta Geoscience Ltd. conducted the field work on behalf of Falconbridge Ltd.

Grant Hendrickson, the senior geophysicist for Delta Geoscience Ltd., planned and supervised this survey in consultation with Steve Enns, the senior project geologist for Falconbridge Ltd.

Field work on the Saltspring project began in the Spring of 1984, when Kidd Creek Mines Ltd. flew the area with the INPUT electromagnetic system. Some limited ground follow-up (horizontal loop E.M., V.L.F., MAG) of this airborne survey was done during the summer of 1984, and the spring of 1985. The area that received follow-up was called the Musgrave Grid. Ground electromagnetic surveys accurately outlined weak to moderate strength bedrock conductors. These conductors appeared closely related to outcropping black pyritic siltstone horizons. The apparent intimate interbedding of siltstone and felsic volcanic rock was an interesting feature of the grid geology.

In an effort to further define the source of the conductivity, Induced Polarization and Resistivity surveys were conducted on the Musgrave Grid this February. This report is essentially about the I.P. survey, however it is closely related to the earlier surveys.

Accommodation and meals for the Delta Geoscience Ltd. crew was found in motels on Saltspring Island. Access to the grid was by four wheel drive vehicle.

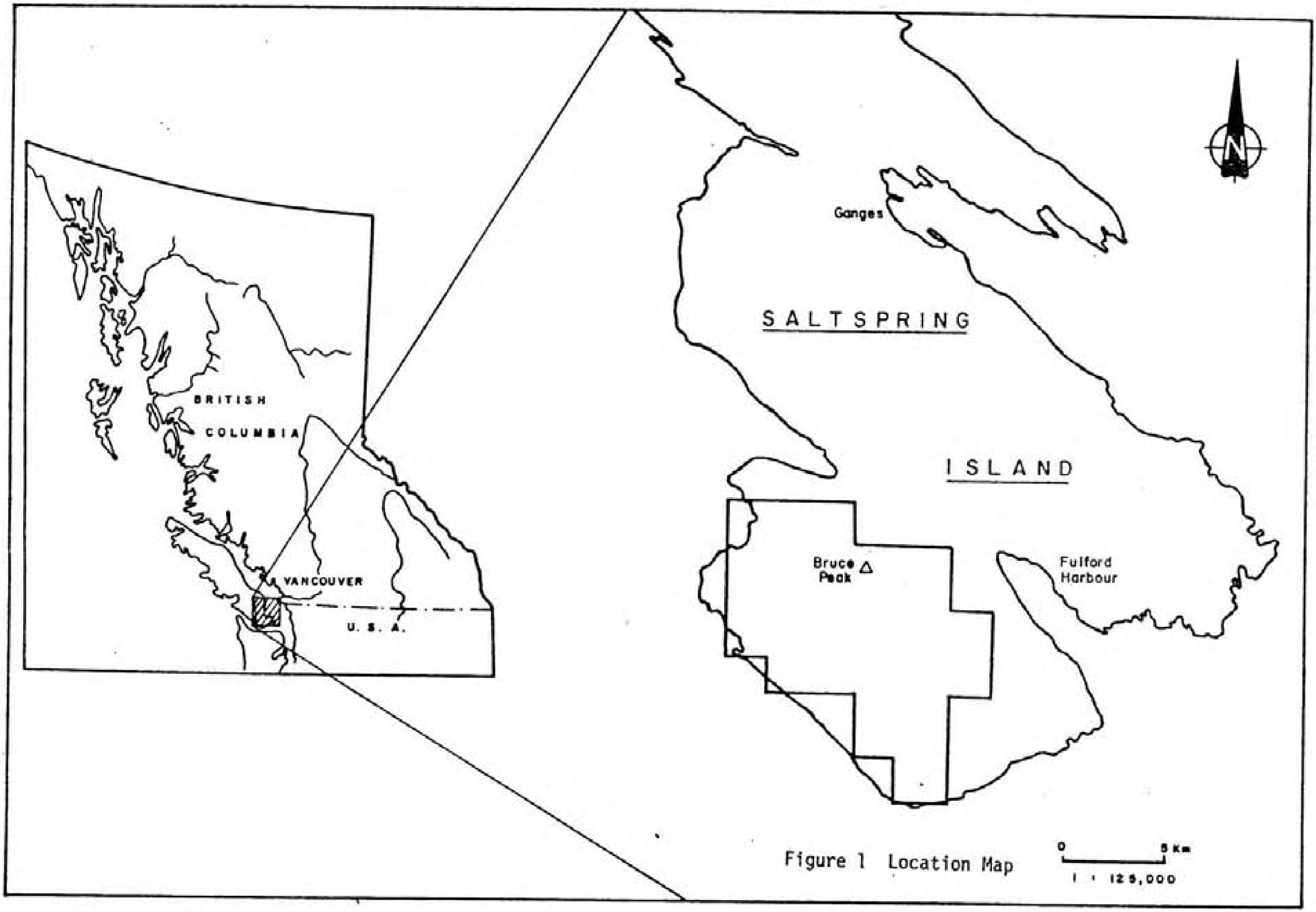
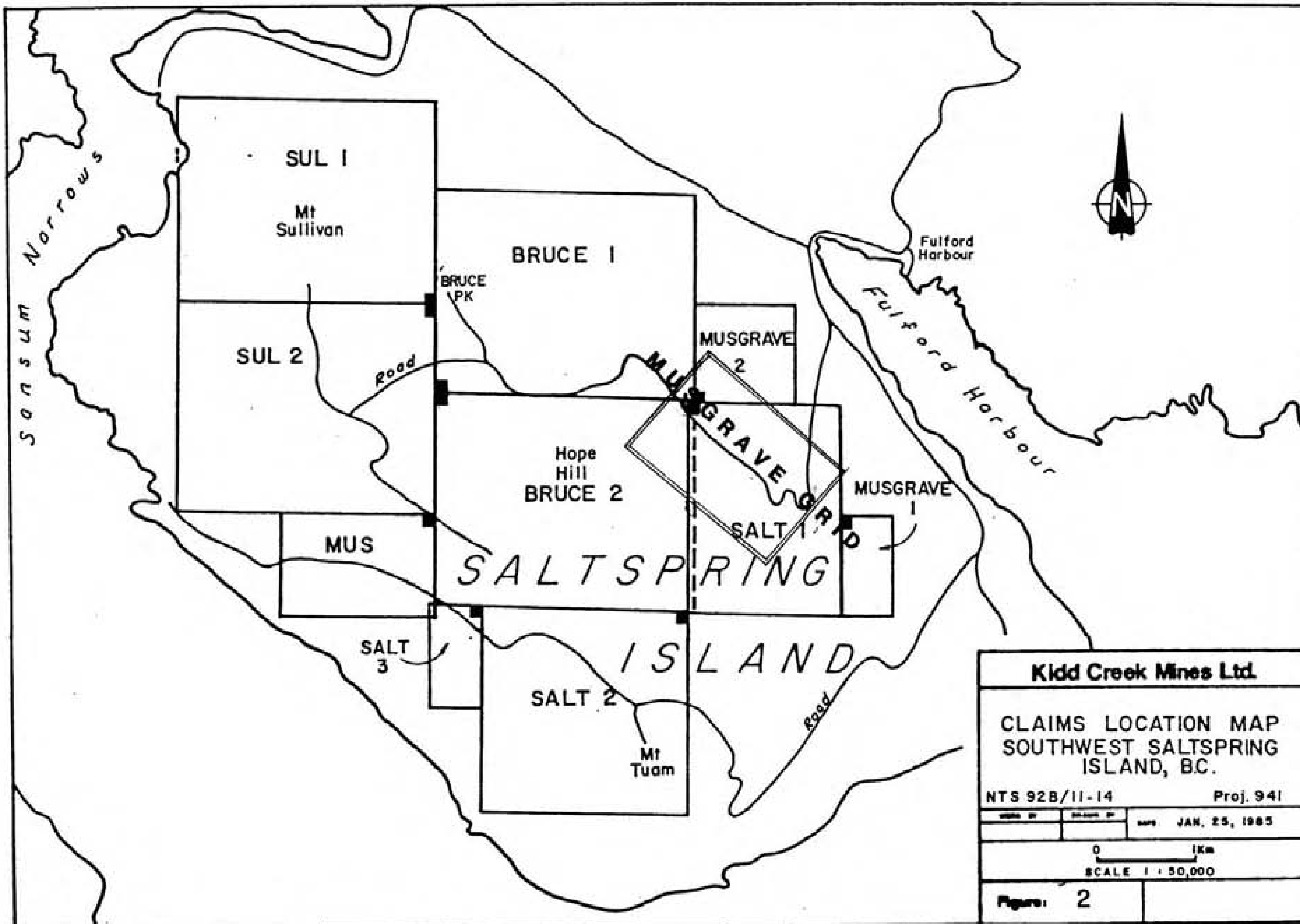


Figure 1 Location Map



Sansum Narrows
SUL 1
Mt Sullivan
SUL 2
BRUCE 1
BRUCE PK
Road
Hope Hill
BRUCE 2
MUSGRAVE 2
MUSGRAVE GRID
SALT 1
MUSGRAVE 1
MUS
SALTSPRING
ISLAND
SALT 3
SALT 2
Mt Tuam
Road
Fulford Harbour
Fulford Harbour
N
Kidd Creek Mines Ltd.
CLAIMS LOCATION MAP
SOUTHWEST SALTSPRING ISLAND, B.C.
NTS 92B/11-14
Proj. 941
JAN. 25, 1985
0
1Km
SCALE 1 : 50,000
Figure: 2

PERSONNEL - Delta Geoscience Ltd.

Grant Hendrickson	- Senior Geophysicist/Supervisor
Scott Cosman	- Junior Geophysicist/Crew Chief
Rick Ofner	- Technician
Greg Martin	- Technician
Frank Renaudat	- Technician

EQUIPMENT

1 - Scintrex I.P.R.10 Induced Polarization Receiver
1 - Scintrex 250 watt Induced Polarization Transmitter
4 - Portable King V.H.F. Radios
1 - Toshiba 3100 Field Computer
1 - 4x4 Truck

DATA PRESENTATION

Chargeability and Resistivity data at a scale of 1:5000 is presented as:

a) Contoured Plans (Figs. #3A & 3B)
b) Stacked Profile Plans (Figs. #3C & 3D)
c) Posted Raw Data Plans (for reference) (Figs. #3E & 3F)

The contoured plan format facilitates viewing the spatial position of anomalies. Contour intervals were chosen to point out the most salient features.

The stacked profile plans assist in the interpretation of the results, since the profile shape is largely determined by the depth and dip of the anomaly.

The contour interval and scale of the maps is presented in the map legends.

SURVEY PROCEDURE

The Musgrave grid that was used for the previous years' ground electromagnetic surveys, consisted of a series of lines chained independent of each other and not tied to a common baseline. As the chaining on this grid needed to be restored prior to the I.P. survey, it was the ideal time to establish a proper grid system using the old lines, but in a proper grid sequence. To do this, we arbitrarily selected part of the Musgrave Road to be baseline 10+00N, since the position of the road was well known relative to the lines. Lines were given the appropriate eastings to accompany this new baseline.

Having a proper grid system allows for accurate cross line comparisons and for computer plotting of the results. At some point in the future, the old E.M. and MAG data will have to be assigned new co-ordinates to be properly referenced to this I.P. survey. This is a simple, but important step, since some conductors and magnetic anomalies are certainly coincident with the I.P. anomalies.

Delta Geoscience Ltd. reconstructed this grid as outlined above and established two short new lines in an area of interest to allow for better line-to-line correlation. Note, that most lines are separated by 200+ metres. A limited amount of line cutting was also done, to ensure lines extended to a more common boundary.

Survey station interval was set at 20 metres horizontal, which required the chaining crews to apply slope corrections for the rugged topography of the grid.

The Schlumberger electrode configuration was chosen for this survey. Current electrode separation, AB, was set at 240 metres. Potential electrode separation, MN, was set at 40 metres. This array gives excellent horizontal resolution with the prime depth of investigation at the 30 to 50 metre depth range. The array gives better signal to noise response, when compared to other arrays for the same depth of investigation - an important consideration when using a battery-powered 250 watt portable transmitter. Some general information on dip is also obtained by using the Schlumberger array. The mobility of this array in rough terrain and thick bush allows for cost effective surveying, since good daily production is achieved.

For comparison with the old data, the following list gives the corresponding new line:

L.J	....	L.20+00E.
L.I	....	L.17+45E.
L.H	....	L.14+75E.
L.G	....	L.12+55E.
L.F	....	L.10+35E.
L.E	....	L. 8+25E.
L.D	....	L. 6+05E.
L.C	....	L. 4+05E.
L.B	....	L. 2+05E.
L.A	....	L. 1+05E.

The two new lines are L.9+35E and L.11+35E.

Note: That 10+00N on these lines often, but not always, coincides with the north edge of the Musgrave Road.

DISCUSSION OF THE DATA

Generally, we expected the Induced Polarization to respond primarily to sulphide zones and only weakly to lithology. The Resistivity was expected to respond primarily to the lithology and only weakly to disseminated sulphide zones. However, if the sulphide mineralization is quite massive, there generally is a good resistivity response (resistivity low). The variation in response over different rock types helps us map the geology of the grid. Areas of outcrop allow us to calibrate the geophysical data to the geology.

Graphitic zones commonly found in Siltstones can give rise to conductors and I.P. anomalies. These graphitic zones often only have a minor sulphide association.

A further complication or encouragement in the evaluation of this data is that it is well known in volcanogenic massive sulphide exploration, that a close affinity exists between felsic volcanic rocks and sedimentary rocks and that the larger deposits frequently have a larger sedimentary component to the overall stratigraphy of the deposit area.

The interbedded Siltstone and felsic volcanics found in the Musgrave grid, give rise to both types of responses, i.e. from sulphide and from graphitic argillite zones, thus the geophysical data needs to be studied carefully with detailed geology maps to ensure we test those conductors and I.P. anomalies that have some relation to the felsic volcanic rocks. It is clear however, that the bulk of the numerous conductive and chargeable horizons that cross this grid north of L.10+00N, are due to graphitic, pyritic argillites.

In the centre of this grid however, near L.10+00E and 9+60N, there is an interesting small embayment or flexure within the stratigraphy. This area may have been significant for possible sulphide accumulations (refer to contour Resistivity and Chargeability maps). In particular, the isolated strong resistivity low and corresponding strong chargeability high on Lines 11+35E and 12+55E at approx. 11+00N, present an attractive geophysical target that appears to lie within felsic volcanic rocks (refer to plan of profiles). Other I.P. anomalies in this immediate area should also be looked at..

In trying to compare these geophysical anomalies to the grid geology, the need for a more detailed geology map becomes very apparent. The very shallow overburden of the survey area should allow for a more detailed map.

As expected, the large Gabbro body that dominates the geology of the grid stands out geophysically as a resistivity high and chargeability low. The variability in high resistivity over the Gabbro suggests the Gabbro body is complex and may be composed of several different mineralogical phases. The Gabbro body is not as thick on the extreme east side of the grid and may pinch out further to the east.

The iron formation to the south side of the grid responded weakly to the I.P. survey. The lines on the west side of the grid did not extend far enough south to cross this interesting horizon. The weak I.P. response of this iron formation indicates that there is a minor sulphide component to this predominantly oxide iron formation. The trace of this iron formation along strike may lead to areas where facies change to a more significant sulphide iron formation.

A moderate to steep south dip to the bedrock is indicated by the geophysical profiles.

CONCLUSION AND RECOMMENDATIONS

The Induced Polarization and Resistivity surveys have furthered the understanding of the grid geology and shown that isolated anomalies (chargeability highs with coincident resistivity lows) also exist alongside the more formational looking conductive anomalies.

Effort should be made to construct a much more detailed geological map, in order to correlate geophysical anomalies more closely to the geology. This work should be done prior to any drilling programs, but could be done in conjunction with a trenching program.

The old surveys, HLEM/VLF/MAG should be adjusted and added to the computer file of the new Musgrave Grid. Several of the I.P. and resistivity anomalies have coincident magnetic responses which suggest the mineral pyrrhotite is present.

Consideration should be given to expanding the present grid - perhaps this should be contingent upon the results of further geological work.

G. Hendrickson

Grant A. Hendrickson, P.Geoph.

REFERENCES

Bhattacharya, B.B., and Dutta, I., 1982: Depth of Investigation Studies for Gradient Arrays over Homogeneous Isotropic Half-Space: Geophysics, Vol.47, 1198-1203.

Coggon, J.H., 1973: A Comparison of I.P. Electrode Arrays: Geophysics, Vol.38, 737-761.

Mallalieu, D.G., and Hendrickson, G.A., 1985: Assessment Report on the Saltspring Island Claims.

Malmqvist, L., 1978: Some Applications of IP-Technique for Different Geophysical Prospecting Purposes: Geophysical Prospecting 26, 97-121.

STATEMENT OF EXPENSE

SURVEY CHARGES:

Chaining:
4 days @ $600.00/day .... $ 2,400.00.

I.P/Resistivity Survey:
6 days @ $1.250.00/day .... $ 7,500.00.

Room and Board: .... $ 1,563.26.

Ferry Charges: .... $ 187.90.

REPORT CHARGES:

Data Processing, Map Preparation and
Final Report:
2.5 days @ $300.00/day .... $ 750.00.

Vancal Reproductions - Blackline copies .... $ 17.10.

4 Extra Copies of Report .... $ 100.00.

$12,518.26.

Orthophotos 8400.00

$ 20,918.26

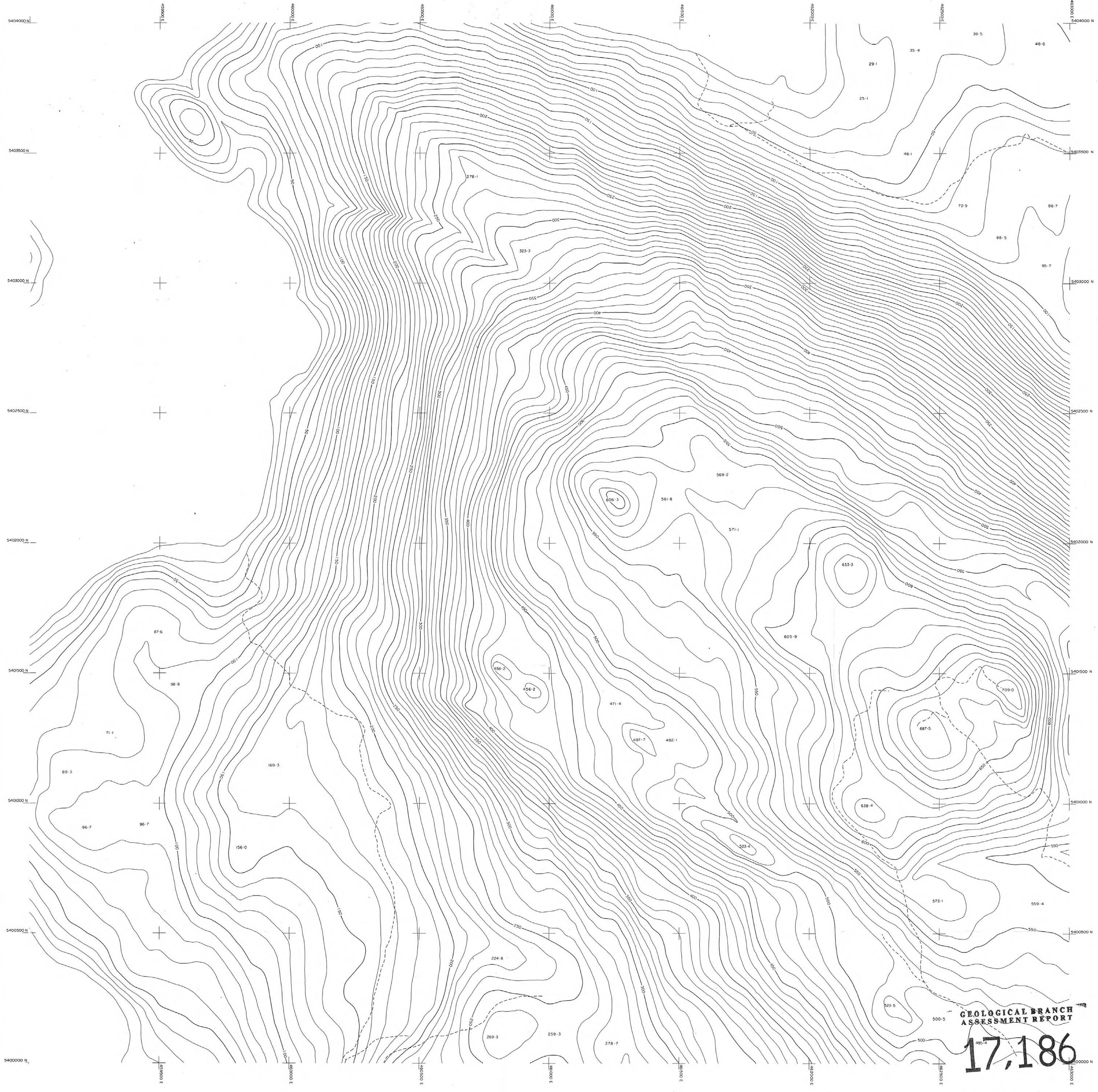
STATEMENT OF QUALIFICATION

Grant A. Hendrickson

- B.Science, U.B.C. 1971, Geophysics option.
- For the past 17 years, I have been actively involved in mineral exploration projects throughout Canada and the United States.
- I am a registered Professional Geophysicist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
- I am an active member of the S.E.G., E.A.E.G., and B.C.G.S.

G. Hendrickson

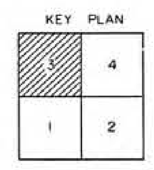
Grant A. Hendrickson, P.Geoph.



SALTSPRING ISLAND, B.C.

FALCONBRIDGE LIMITED

Scale 1:5000
Contour Interval 10m



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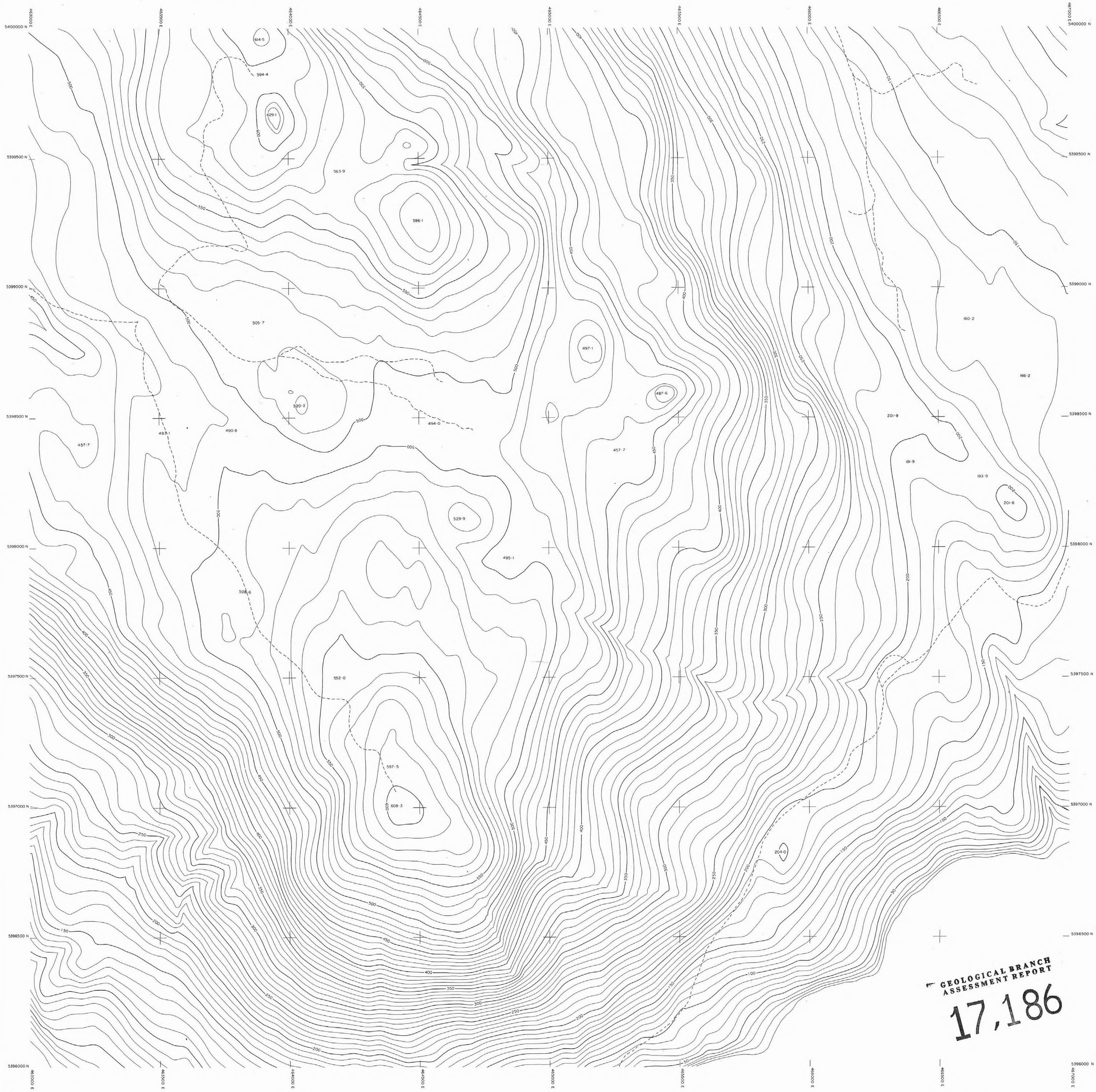


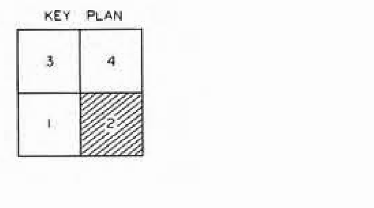
SALTSPRING ISLAND, B.C.

FALCONBRIDGE LIMITED

Scale 1:5000

Contour Interval 10m

KEY PLAN



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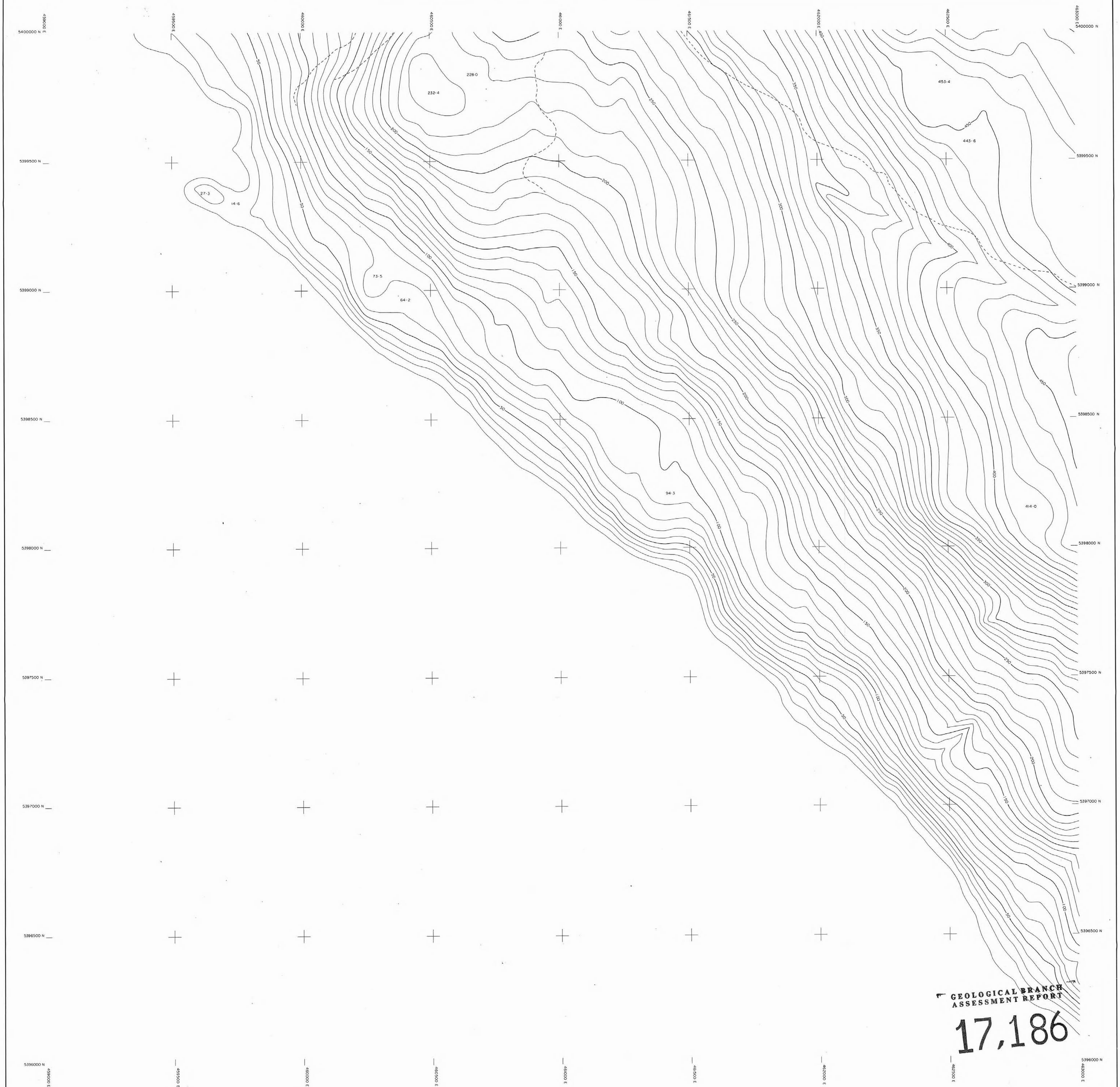
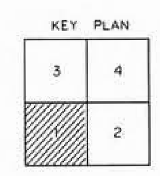


SALTSPRING ISLAND, B.C.

FALCONBRIDGE LIMITED

Scale 1:5000
Contour Interval 10m

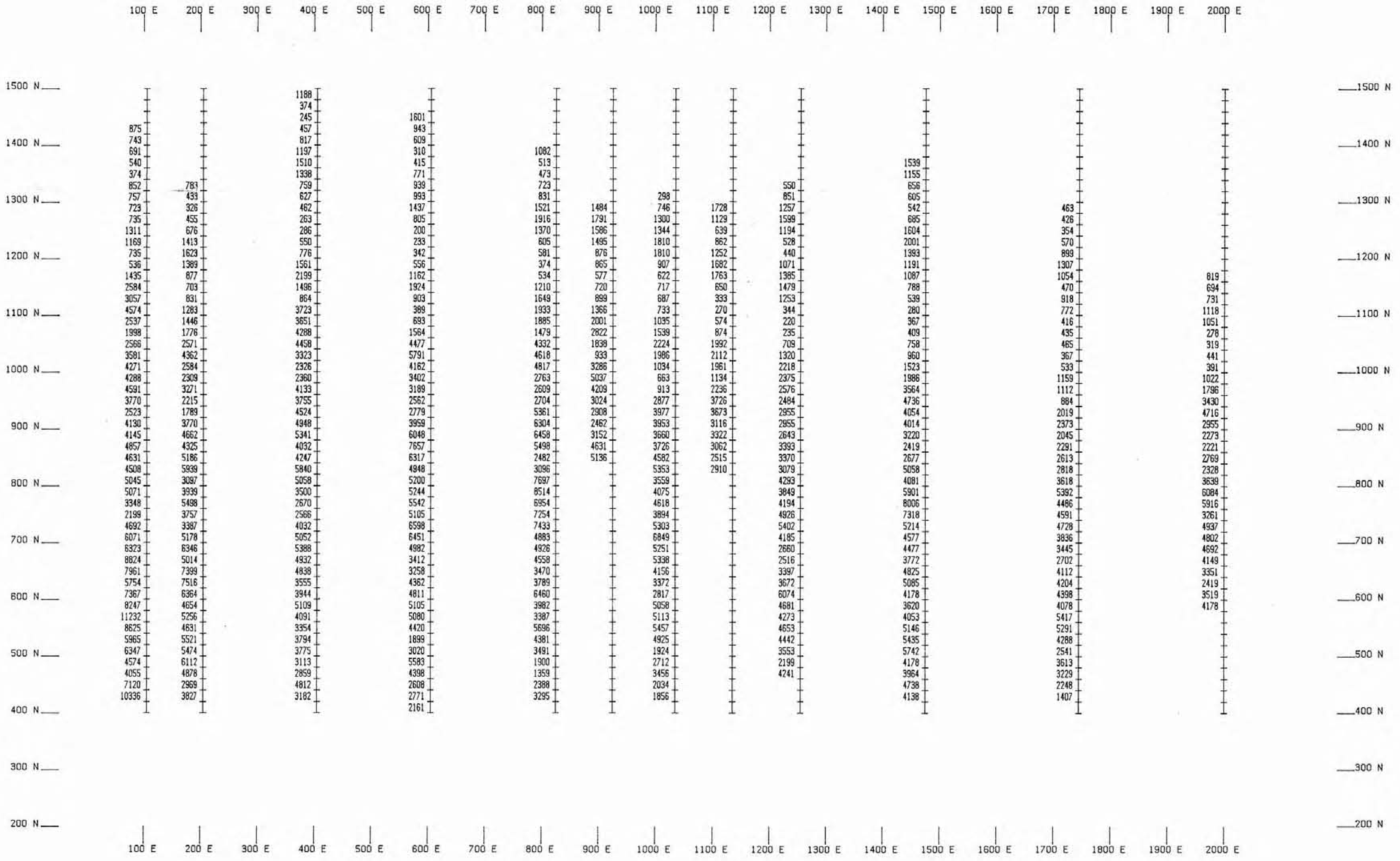


TRIATHLON MAPPING CORPORATION FBL 104 FEB 88, 1987 AIR PHOTOGRAPHY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,186

Inclination: 72 Deg
Declination: 23 Deg E



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SALTSPRING PROJECT
MUSGRAVE GRID
RESISTIVITY DATA, SCHLUMBERGER ARRAY
AB=240m, MN=40m

raw data plan, ohm-m

SCALE 1:5000

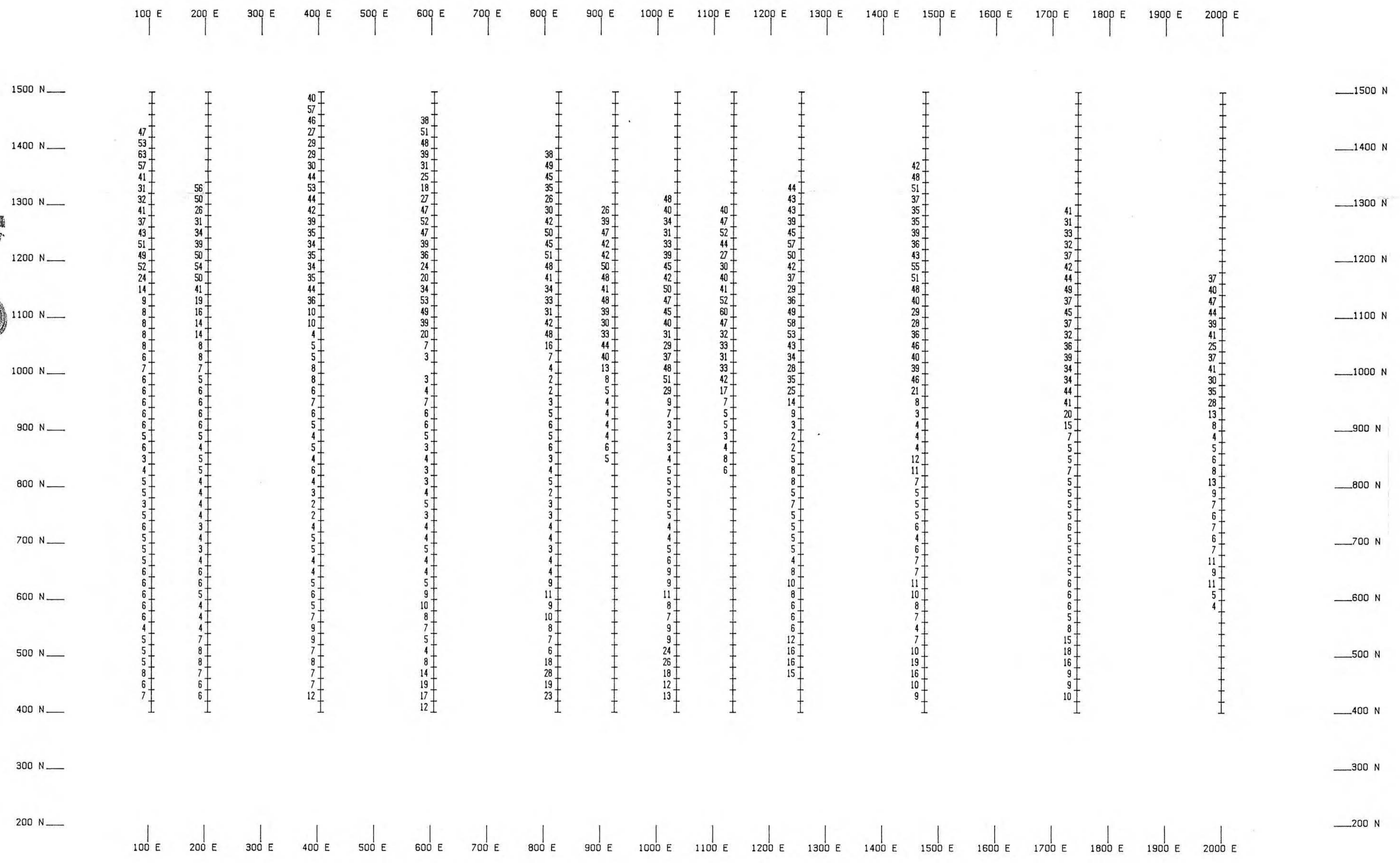
DELTA GEOSCIENCE LTD

FIG 3F

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,186

Inclination: 72 Deg
Declination: 23 Deg E



FALCONBRIDGE LTD

SALTSPRING PROJECT
MUSGRAVE GRID
CHARGEABILITY DATA, SCHLUMBERGER ARRAY
AB=240m, MN=40m

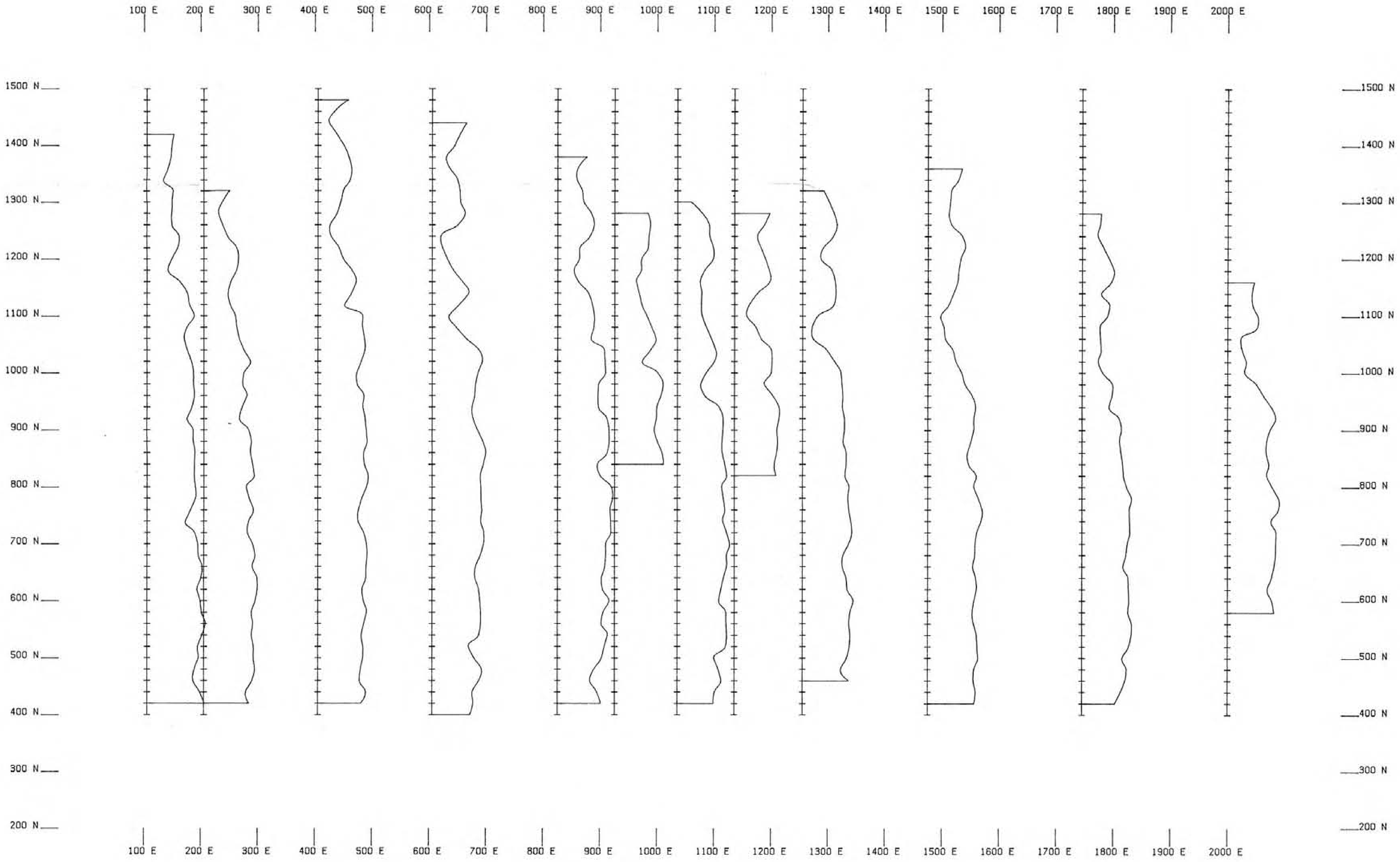
raw data plan, ms

SCALE 1:5000

DELTA GEOSCIENCE LTD

FIG 3E

Inclination: 72 Deg
Declination: 23 Deg E



FALCONBRIDGE LTD

SALTSPRING PROJECT
MUSGRAVE GRID
RESISTIVITY PROFILES, SCHLUMBERGER ARRAY
AB=240m, MN=40m

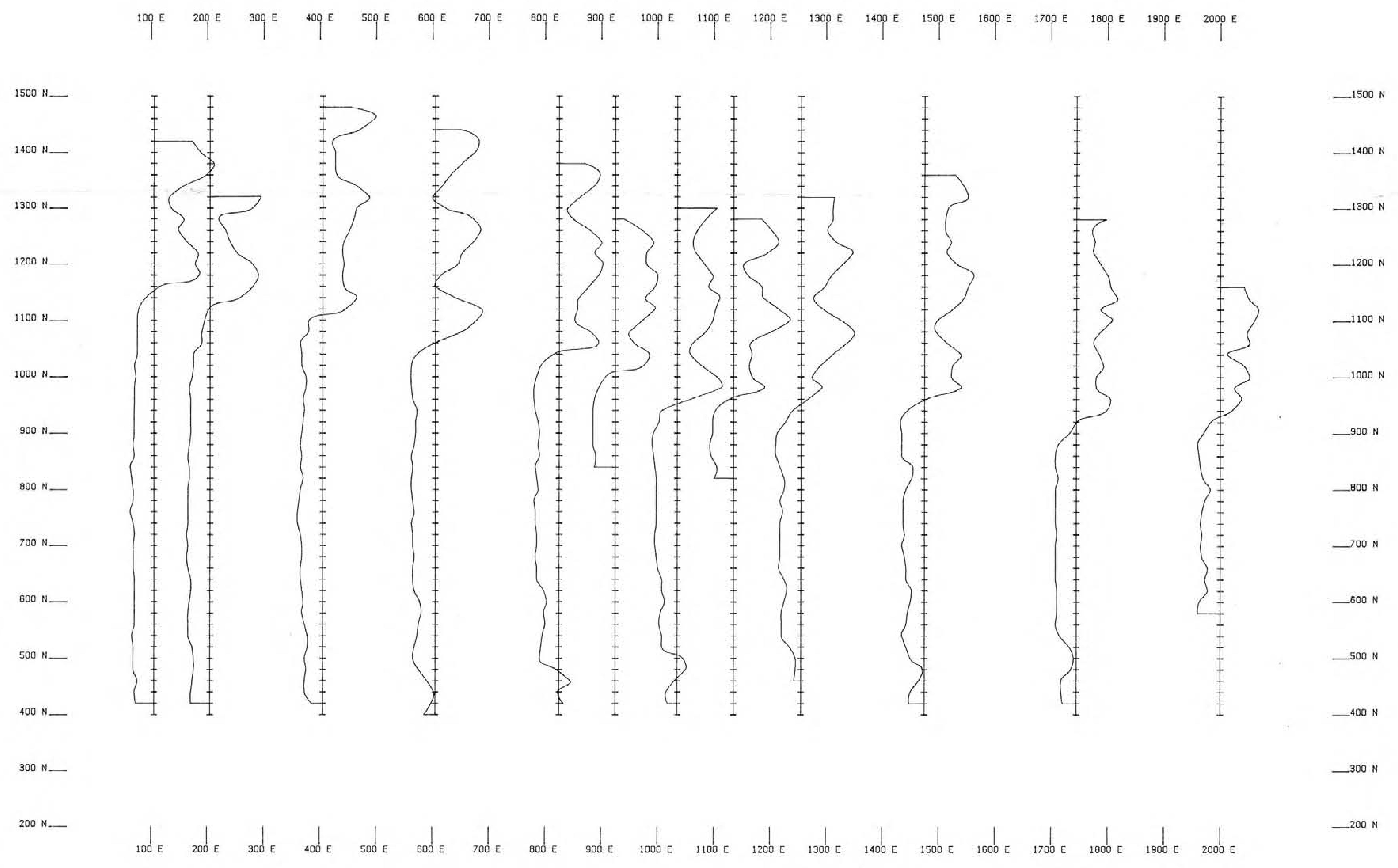
log scale 1 decade/cm, base 100 ohm-m

SCALE 1:5000

DELTA GEOSCIENCE LTD

FIG 3D

Inclination: 72 Deg
Declination: 23 Deg E



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SALTSPRING PROJECT
MUSGRAVE GRID
CHARGEABILITY PROFILES, SCHLUMBERGER ARRAY
AB=240m, MN=40m

1 cm = 20 ms, base 20 ms

SCALE 1:5000

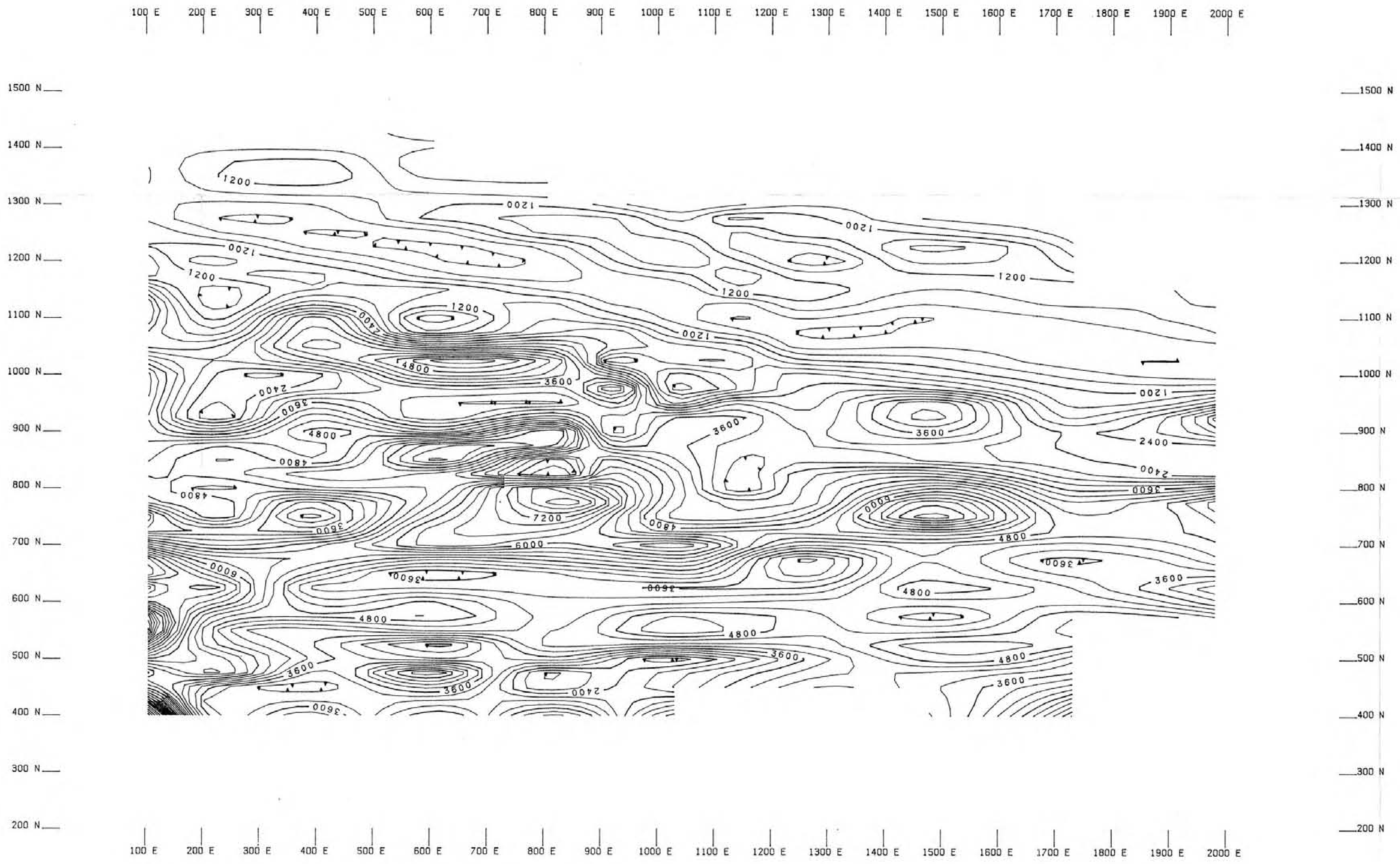
DELTA GEOSCIENCE LTD

FIG 3c

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,186

Inclination: 72 Deg
Declination: 23 Deg E



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SALTSPRING PROJECT
MUSGRAVE GRID
RESISTIVITY PLAN, SCHLUMBERGER ARRAY
AB=240m, MN=40m

contour interval 300 ohm-m

SCALE 1:5000

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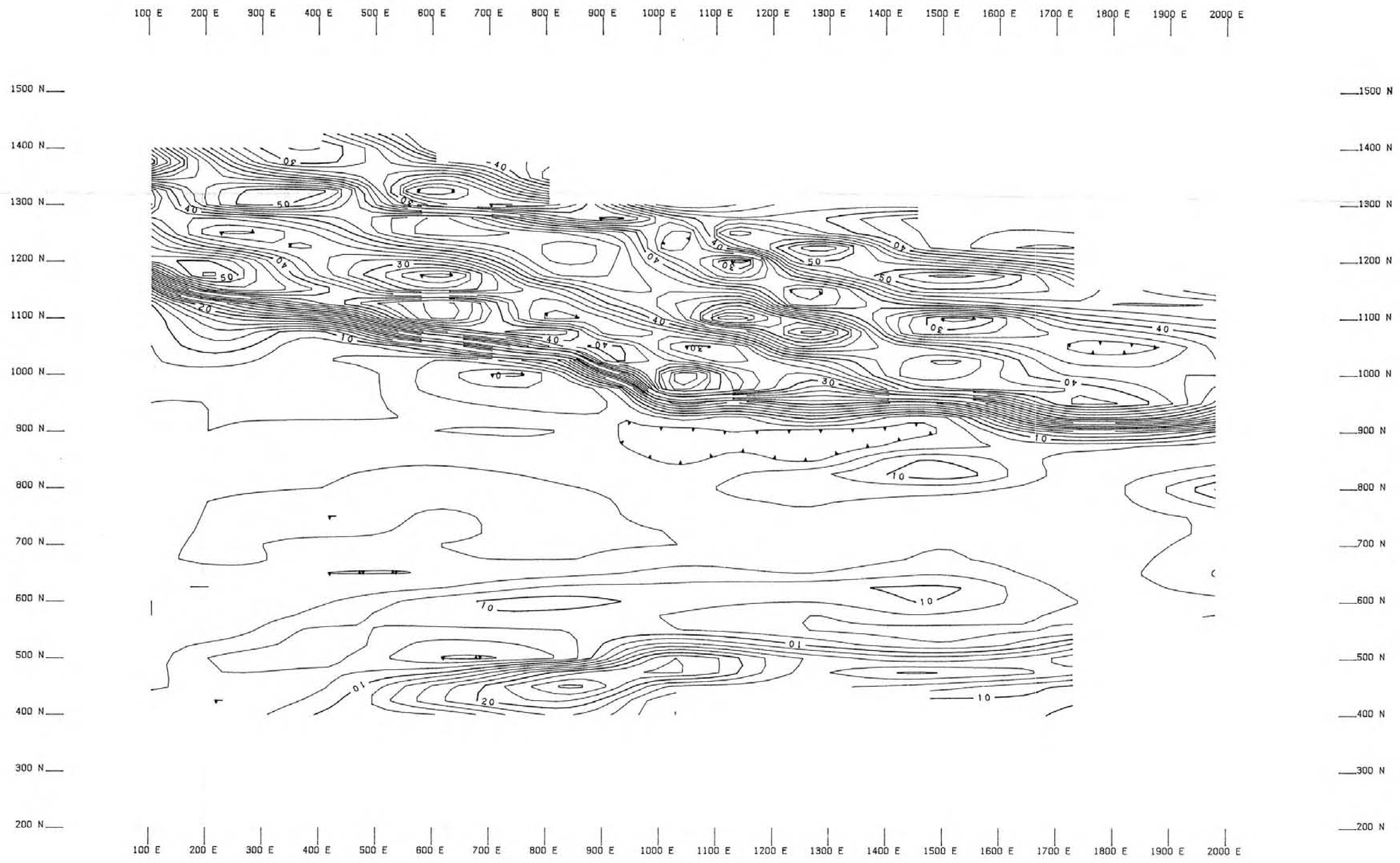
FIG. 3B

Inclination: 72 Deg
Declination: 23 Deg E



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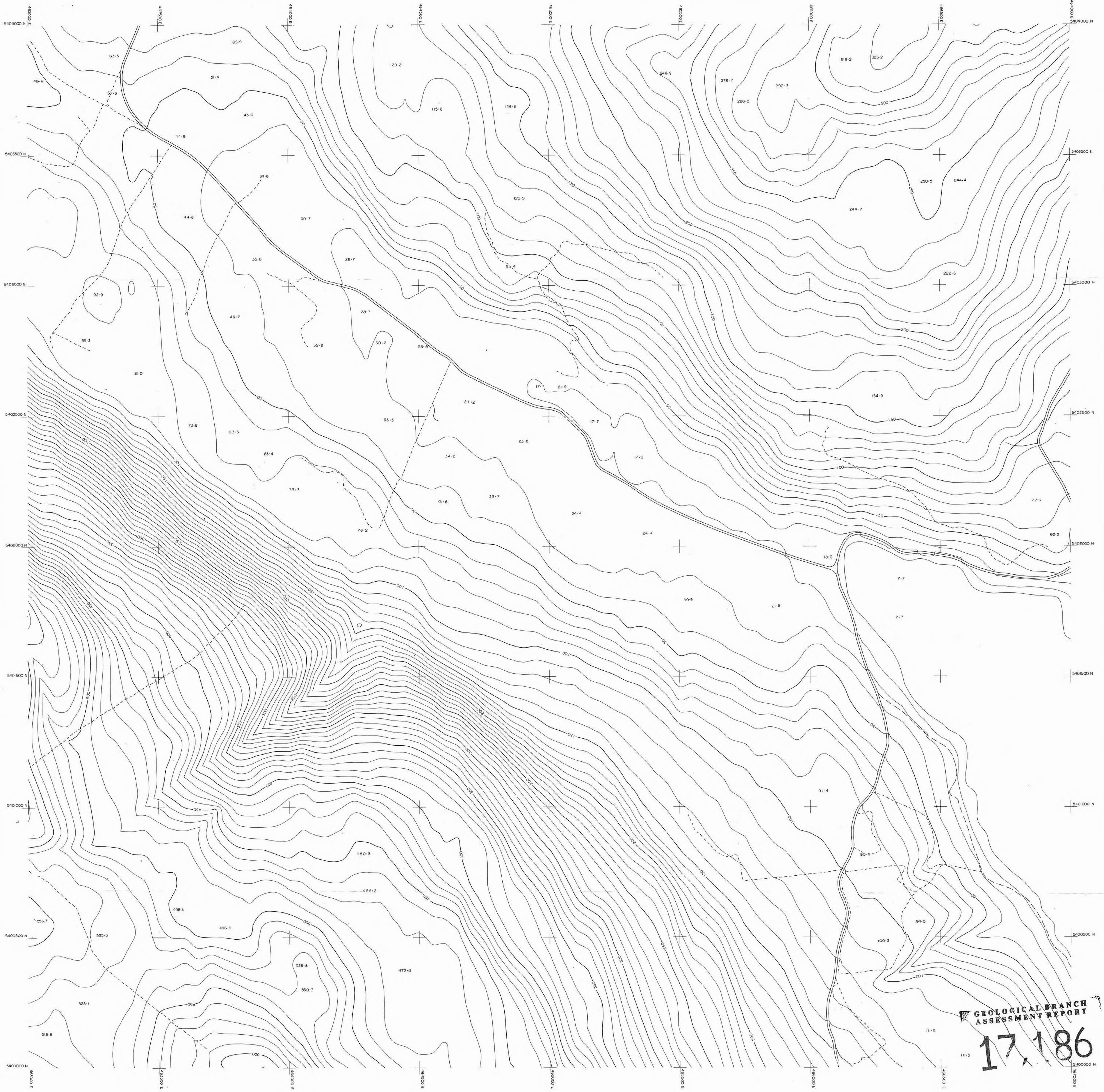
SALTSPRING PROJECT
MUSGRAVE GRID
CHARGEABILITY PLAN, SCHLUMBERGER ARRAY
AB=240m, MN=40m

contour interval 2 ms

SCALE 1:5000

DELTA GEOSCIENCE LTD

FIG 3A



SALTSPRING ISLAND, B.C.

FALCONBRIDGE LIMITED

Scale 1:5000
Contour Interval 10m

TRIATHLON MAPPING CORPORATION FBL 104 FEB 88, 1987 AIR PHOTOGRAPHY