GEOPHYSICAL ASSESSMENT REPORT
TRAVIS PROPERTY
HOSS 1-6 AND TRAVIS H.C.'s
RECORD Nos. 2728-2729, 2914
MOUNT KATHLEEN AREA
SIMILKAMOUS R.D.
BRITISH COLUMBIA

LAT. 49° 47', LONG. 120° 04'
MTS 92R/16

OPERATOR: BRENDA MINES LTD.
OWNERS: D.B. AGUR, J.A. CURRIE

WORK PERFORMED BETWEEN JUNE 13 AND JULY 22, 1987

REPORT BY P. MARSH, GEOPHYSICIST
KONANDA EXPLORATION COMPANY, LIMITED

NOVEMBER 9, 1987

GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,977
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<td>L 400N (100 m D.L.)</td>
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<td>L 300N (50 m D.L.)</td>
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1. INTRODUCTION

The Travis property is situated in the area between Mount Kathleen and Crescent Lake about 25 kms west of the town of Peachland. Access is by paved and graveled roads from Peachland, a total distance of 26.5 kms. The applicable physiographic division is the Thompson Plateau (GSC Map 1701A, 1986).

For the purposes of this survey, the Travis property consists of 5 claims comprised of a total of 26 mineral claim units. The property is operated by Brenda Mines Ltd. Registered owners of the claims are D. E. Agur (Moss) and J.A. Currie (Travis).

The exploration history of this area goes back to the 1890's at which time the area was explored for lode and placer gold. During the exploration activity resulting from the Brenda development in the mid.1960's the Travis area received minor attention from Brenmac Mines by way of prospecting and soil sampling (Skerl, 1967). In the late 1970's and early 1980's, the exploration group at Brenda Mines Ltd. conducted reconnaissance geological and geochemical surveys in the area of current interest locating minor occurrences of molybdenite. Programs of detailed geochemical sampling and drilling were carried. Part of this work is documented in Assessment Reports Nos.9123 and 10108, by P.C. Bankes and A. R. Pollmer, respectively.

Brenda Mines Ltd. resumed exploration of the claim area this year with geologic mapping, I.P., ground magnetics and drilling in conjunction with a reevaluation of the previous exploration data. The I.P. survey discussed in this report is an integral part of the current reassessment. It is expected that this survey when considered in light of the total data will indicate drill targets for both near surface and relatively deep occurrences of molybdenite mineralization.

The current exploration of these claims for porphyry type mine mineralization reflects to a large extent proximity to the Brenda mine, an operation which is nearing its reserves depletion. The economics of any new porphyry discovery by Brenda Mines Ltd. in this area could be significantly enhanced by the existence of the nearby mill.

The results of a 19 km Frequency Domain I.P. program are reported in this Assessment Report along with a ground magnetic survey of the same grid.
2. PROPERTY LIST

<table>
<thead>
<tr>
<th>CLAIMS</th>
<th>UNITS</th>
<th>RECORD NUMBERS</th>
<th>DATES RECORDED</th>
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<tr>
<td>MOSS 1-6</td>
<td>6</td>
<td>2720-2725</td>
<td>NOV. 18, 1986</td>
</tr>
<tr>
<td>TRAVIS</td>
<td>20</td>
<td>2914</td>
<td>MAY 21, 1987</td>
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3. DETAILED TECHNICAL DATA AND INTERPRETATION

During June and July of 1987 Induced Polarization and Magnetometer surveys were completed on the TRAVIS grid located in the vicinity of Brenda Mines - Peachland, B.C. area. The I.P. survey employed a dipole-dipole array (both 100 meter and 50 meter dipoles) and Frequency Domain equipment manufactured by Phoenix Geophysics Ltd. of Ontario. Readings were recorded down to the fourth separation \( n=4 \) yielding an effective depth penetration of up to 75 – 90 meters with the 50 meter dipole survey and possibly up to 140 – 170 meters with the 100 meter dipoles but with much decreased resolution.

The magnetometer survey employed a "UNIMAG" Total Field Precession magnetometer manufactured by Exploranium of Ontario. Readings were corrected for diurnal and day to day variations with an overall survey accuracy of 10 gammas. Readings were recorded at 12.5 meter intervals.

MAGNETOMETER SURVEY

The magnetometer survey has mapped a number of interesting variations of the recorded magnetic field. Specifically three magnetic domains are mapped as shown on the compilation map, representing changes in the bedrock geology. Due to the overall low amplitude of the magnetic field the contacts as defined by the survey are at best approximate. One area that is reasonably well defined is the low and uniform magnetic susceptibility observed over the north quarter - third of the grid indicating as mentioned above a change in the bedrock composition.
INDUCED POLARIZATION SURVEY

The IP results are presented in both plan and in pseudo-section form. The plan views show both the resistivity and the PFE values that have undergone a filtering process that combine the various "n" values into a single value that is representative of the "average" ground response without regard to depth. For this grid only the n=1 and n=2 readings were combined as this combination has yielded a fair picture of the overall IP survey.

The IP survey has mapped a large elliptical shaped anomaly (600m X 350m) along with two small satellitic zones to the east and south east. The Percent Frequency Effect amplitude of the main zone rises from a background of 2% - 3% to a maximum of 5% - 6.5%. The PFE plan map shows a strong directional trend of 035 - 040 degrees along the major axis of the ellipsoid. What is not readily seen on this plan map is the apparent shallow dip (or increasing depth of burial) of the anomalous source towards the grid west. This is readily observed on the pseudo-sections particularly on Line 100N.

The resistivity plan map shows a more complex picture however a bias, which is not visually apparent on the contour plan map, is evident and parallels the trend observed from the PFE data. The major axis of the ellipsoidal PFE anomaly lies on a narrow zone of low resistivity hinting at the possibility of a coincidental structural break.

The resistivity signature north and west of the PFE zone shows a distinct and uniform decrease indicating in this case a combination of change in bedrock geology and thickening of the overburden cover.

Pseudo-sections provide a means of displaying the IP data in relation to its apparent depth. Unfortunately the display beyond n=1 is geometrically distorted (in a predictable manner) and caution must be exercised when viewing and interpreting these sections. Attention should be paid to the anomaly "bars" drawn above the PFE data sections.

LINE 600S:
Only a 100 meter dipole array was completed on this the most southerly Line of the grid. The wide dipole survey detected two zones of anomalous PFE with the east zone being well defined but the weaker western zone is open to the west. Separating the two responses is a pronounced and narrow PFE low indicating that there exists a very abrupt structure separating the anomalies.

LINE 500S:
The 100 meter dipole survey defined a wide PFE response between 50W and 300E and a secondary zone only partially defined at the extreme east end of the line. A zone of high resistivity separates the two anomalous PFE responses.
The 50 meter dipole survey detected the top of the main zone at 

\( n=4 \) indicating that the top of the anomaly occurs at a depth of 

approximately 75 - 90 meters. A high PFE background is noted over 

the west half and beyond the end of the line. A high resistivity 

unit is recorded east of the anomalous PFE response.

**LINE 400S**:

This Line presents a similar picture to Line 500S (50 meter 

dipole data) in that a high PFE background of 2\% - 4\% is mapped 

west of 150E with no discrete anomalous source identified. A weak 

secondary zone is recorded between 375E and 425E.

**LINE 300S**:

This line of data has resolved two distinct anomalous responses 

as indicated on the pseudo-sections. They are both clearly 

defined and occur at (or near) surface and extending to depth 

beyond \( n=4 \) (approximately 75 to 100 meters). The west anomaly 

lies within a low resistivity environment whereas the east 

anomaly is associated with much higher resistivities. This would 

indicate that each of these anomalies occur in different 

geological units.

**LINE 200S**:

A broad anomalous PFE zone is mapped as shown on the pseudo-

section. Higher PFE values are recorded as the depth of 

investigation increases with no discrete zone of "intensity" 

being defined. The east boundary shows a sharper cutoff as 

compared to the west boundary.

**LINE 100S**:

A strong and well defined PFE anomaly is recorded between 75E 

and 250E on this line within a more extensive high background 

area. As for Line 200S above there is a sharp anomaly cutoff on 

the east side and a poorly defined west edge of the high 

background response. This PFE zone occurs at surface and extends 

to depth.

**LINE 0**:

The strong PFE anomaly recorded on Line 100S extends to this 

line and is seen between 100E and 300E. The overall character of 

the recorded PFE's is identical to that recorded for Line 100S. 

The PFE data on this line also indicates that the source of the 

high background forms a very large unit with a suspected shallow 

dip towards grid west. This apparent dip becomes very evident on 

the sections to the north. A small isolated response is noted at 

500E - 550E with its possible extension to Line 100N/550E.

**LINE 100N**:

The main PFE anomaly extends to this line but with a reduction 

in the PFE amplitude. The recorded PFE and resistivity pattern 

clearly shows that the source of the PFE anomaly in the area of 

this line is extensive and exhibits a shallow dip to grid west. 

The east contact is very sharp and well defined whereas the 

western contact is poorly if at all defined. This anomaly should 

be at or near surface between 200E and 400E.
LINE 200N:
Both 100 meter and 50 meter dipoles were completed on this survey line. The 50 meter dipole data shows the anomaly amplitude decreasing significantly and the resistivity data shows a change in character. The 100 meter dipole data continues to record a significant anomaly that is not quite consistent with what was recorded from the 50 meter dipole survey. This would tend to indicate that the 100 meter dipole anomaly is the result of an off-line source occurring to the south rather than seeing directly below. It is possible, considering the magnetic data that a geological boundary exists between Lines 200N and 100N.

LINE 300N:
The effects of overburden cover is evident in both the resistivity and PFE data and this is observed for the 100 meter and 50 meter dipole data. The contribution due to overburden appears to be evident only at n=1 and 2 for the 50 meter dipole survey and at n=1+ for the 100 meter dipole survey. It is clear that the resistivity and PFE signature recorded on this line is very different from those recorded on lines to the south. This is interpreted as a change in the underlying geology.
One feature of interest is the high resistivity source between 100E-200E coupled with a decrease in the PFE values. Anomalous PFE values are noted at both ends of the 100 meter dipole data.

LINE 400N:
This line of data for both the 100 meter and 50 meter dipole survey is very similar to that on Line 300N. The uniformity of the resistivity and the fact that this line lies in an overburden covered valley bottom suggests that the area is water saturated and this would explain the uniformity of the resistivity.

CONCLUSIONS
The IP survey has mapped one major elliptical shaped PFE anomaly along with two minor satellitic anomalies. The main PFE zone is well bounded to the North and to the East along what appears from the magnetic and resistivity data geological contacts. The IP source appears to have a gentle dip towards grid west or more specifically the top of the source describes a shallow dip to the grid west. Surrounding the main zone to the west and south the source lies within a "background" halo of moderate PFE values.
4. STATEMENT OF COST

NORANDA EXPLORATION COMPANY, LIMITED

PROJECT: TRAVIS

TYPE OF REPORT: GEOPHYSICAL

a) Wages:
   No. of Days 40 man days
   Rate per Day 22 md @ $138 + 18 md @ $77 (weighted ave. $110.55/day)
   Dates From: July 12-22, 1987
   Total Wages $4422

b) Food & Accommodation:
   No. of Days 40 man days
   Rate per Day $42.35
   Dates From: June 13-16, July 2, 4, 5, 6, 9, July 12-22, 1987
   Total Costs $1694

c) Transportation:
   No. of Days 1 truck for 11 days; 1 truck for 9 days
   Rate per Day $52.88
   Dates From: June 13-16, July 2, 4, 5, 6, 9, July 12-22, 1987
   Total Costs $1057

d) Cost of preparation of Report:
   Author: 3.5 days
   Drafting: $150
   Typing: $150
   Total $1175

e) Other: Contractors:
   Pacific Geophysical Ltd. (I.P. Surveying) $5513
   Amex Exploration Services (Line cutting) $4110
   Ragnar U. Bruaset (Line cutting, grid survey) $2115
   & Associates Ltd. $11738

f) Unit cost for: I.P.
   No. of Days 11
   No. of Units 19 km
   Unit Cost $1057.15
   Total Cost $20,086
5. REFERENCES


Skerl, A.C. 1967 Report dealing with soil sampling on CHUB, MYRTLE and PIG claims for Brenmac Mines. Assessment Report 1180
STATEMENT OF QUALIFICATIONS

I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

1. I am a Geophysicist residing at 1826 Trutch Street, Vancouver, British Columbia.

2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).

3. I am a member in good standing of the Society of Exploration Geophysicists, Canadian Institute of Mining and the Prospectors' and Developers' Association.

4. I presently hold the position of Division Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.

L. Bradish.
STATEMENT OF QUALIFICATIONS

I, Ragnar U. Bruaset, resident of 5851 Halifax Street, Burnaby, B.C. do hereby certify that I am a principal of Ragnar U. Bruaset & Associates Ltd. and that I have been closely involved in Brenda's exploration activity on the Travis prospect in 1987, having carried out geological mapping, line cutting, established grid control and supervised drilling and carried out compilation work for the project.

I certify that I have been involved in all phases of porphyry copper exploration and development including exploration for stockwork molybdenite deposits for a period in excess of 14 years.

Ragnar U. Bruaset
INDUCED POLARIZATION SURVEY

ARRAY: DIPOLE-DIPOLE
FREQUENCY: 0.25/4 Hz
CONTOUR MULTIPLES: 1
SPACING: 100 m
SURVEY DATE: 14/07/87
OPERATOR: "W&DK"
Rx: PHENIX P11
Tx: PHENIX PTT

PERCENT FREQUENCY EFFECT

SCALE = 1:5000
Surveyed NGI Date: 13/07/67
Plotted by: WK
INDUced POLARIZATION SURVEY

ARRAY: DIPOLE- DIPOLE
FREQUENCY: 30/4 Hz
CONTour MULTIPLES: 1, 1.5, 2, 3, 4, 5, 7, 10
SPACING: 50 m
SURVEY DATE: 14/07/88
OPERATOR: WM/SK
Rx: PHEONIX PT1
Tx: PHEONIX PT1

APPARENT RESISTIVITY (OHM-M)

PERCENT FREQUENCY EFFECT

SCALE = 1000
INDUCED POLARIZATION

ARRAY: DIPOL-E-DIPOLE
FREQUENCY: 25/4 Hz
CONTOUR MULTIPLES: 1, 1.5, 2, 3, 4
SPACING: 50 m
SURVEY DATE: 14/07/87
OPERATOR: WH/SK

CONTOUR INTERVALS:

SCALE = 1: 2500

AREA: PEACHLAND B.C.

DIPOL-E LENGTH: 50 m

PERCENT FREQUENCY EFFECT

SCALE = 1: 2000

DIPOLE LENGTH: 50 m

15 16 17 18 19 20 21 22 23 24

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1.5 1.25 1.25 1.75 1 1 1 1 1 1 1 1 1 1

APPARENT RESISTIVITY (QOHM-M)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1.5 1.25 1.25 1.75 1 1 1 1 1 1 1 1 1 1 1

SPACING:

400E 500E 600E 700E 800E 900E 1000E

90 80 70 60 50 40 30 20 10 0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1.5 1.25 1.25 1.75 1 1 1 1 1 1 1 1 1 1 1

SATELLITE: NORANDA MINES
INDUCED POLARIZATION SURVEY

ARRAY: DIPOLE-DIPOLE
FREQUENCY: 22.5 Hz
CONTOUR MULTIPLES: 1, 3, 5, 7, 10
SPACING: 20 m
SURVEY DATE: 14/07/87
OPERATOR: WK/SK
Rx: PHEONIX 3PV
Tx: PHEONIX IPT

PERCENT FREQUENCY EFFECT

SCALE = 100 m
SCALE = 1/2 km

DIPOLLE LENGTH: 50 m
INDUCED POLARIZATION SURVEY

ARRAY: DIPOL-DIPOLE
FREQUENCY: 4.25 Hz
CONTOUR MULTIPLES: 2, 3, 5, 7.5, 10, 15, ...
SPACING: 50 m
SURVEY DATE: JUN-87
OPERATOR: K.C
Rx: IPV-1
Tx: IPT-1

SCALE = 1:2500

AREA: PEACHAND B.C.
for: BRENDA MINES
NO RAD - LARGEXPLORATION
INDUCED POLARIZATION SURVEY

ARRAY: DIPOLE-DIPOLE
FREQUENCY: 0.25/4 Hz
CONTOUR MULTIPLES: 1 1.5 2 3 4 5 7 10
SPACING: 100 m
SURVEY DATE: 14/07/87
OPERATOR: WK/SK
RX: PHEONIX IPT1
TX: PHEONIX IPT1

APPEARANT RESISTIVITY (OHM-M)

PERCENT FREQUENCY EFFECT

DIPOLE LENGTH: 100 m

SCALE = 1:5000

TEA: PEACHLAND B.C.
for: BRENDA MINES
NORAND EXPLORATION

SCALE = 1:5000
INDUCED POLARIZATION SURVEY

ARRAY:
DIPOL-E-DIPOL

FREQUENCY:
4/25 Hz

CONTOUR MULTIPLES:
2,3,5,7,10,15...

SPACING:
50 m

SURVEY DATE:
JUN-87

OPERATOR:
K.C.

Rx:
PV-1

Tx:
PT-1

APPARENT RESISTIVITY (OHM-M)

PERCENT FREQUENCY EFFECT SCALE

SCALE = 1: 2500

DIPOL LENGTH: 50 m

NORANDA EXPLORATION
INDUCED POLARIZATION SURVEY

ARRAY: DIPOLE-DIPOLE
FREQUENCY: 4/25 Hz
CONTOUR MULTIPLES: 1, 2, 3, 5, 7.5, 10, 15, ....
SPACING: 50 m
SURVEY DATE: JUN-87
OPERATOR: K.C.
Rx: IV1
Tx: PT-1

DIPOLE LENGTH: 50 m

APPARENT RESISTIVITY (OHM-M)

PERCENT FREQUENCY EFFECT

SCALE = 1:2500

Surveyed by: P.G.S.
Date: 29/6/87

NORANDA EXPLORATION