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PMA RESOURCES INC

VANCOUVER, B.C.

INDUCED POLARIZATION REPORT

CLUB 1,2,6 & 7 CLAIMS CLINTON M.D. LAC LA HACHE AREA, B.C., N.T.S. 92P/14W

Lat. 51° 58' N, Long. 121° 240'

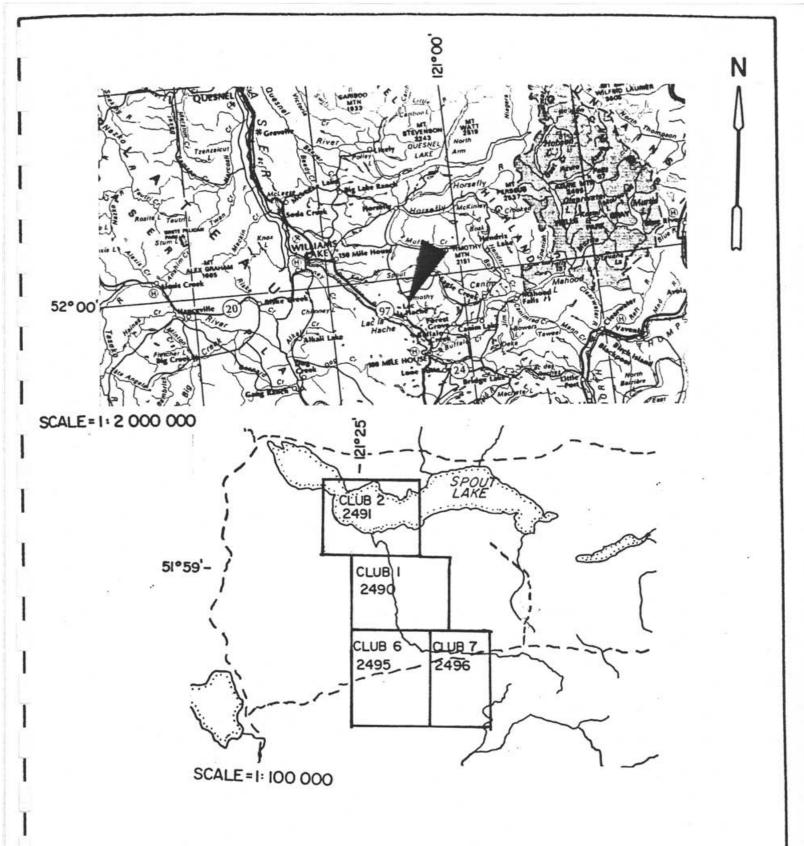
AUTHORS: GLEN E. WHITE P.Eng.

DATE OF WORK: NOV. 26 - DEC. 7 1991 DATE OF REPORT: February 20, 1992

> GEOLOGICAL BRANCH ASSESSMENT REPORT

22,203

- WHITE GEOPHYSICAL INC



PMA RESOURCES INC.

CLUB 1, 2, 6 & 7 CLAIMS
LOCATION AND CLAIMS MAP

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INTRODUCTION

In the fall of 1988 a program of line cutting, soil sampling, magnetic-VLF electromagnetic surveying and trenching was conducted on the Club mineral claims in the Lac La Hache area of B.C. This report describes an induced polarization survey that was conducted in late November 1991 to examine the areas of anomalous copper and gold geochemistry located by the 1988 work.

The project area lies in an alkaline porphyry copper/gold environment referred to as the Lac La Hache Gold Camp. The survey work was conducted under the direction of White Geophysical Inc.

PROPERTY

CLAIM		#UNITS	RECORD #	RECORD DATE
Club	1	20	2490	Dec. 31, 1991
Club	2	20	2491	Dec. 31, 1991
Club	6	20	2495	Dec. 31, 1991
Club	7	15	2496	Dec. 31, 1991

The mineral claims are in the Clinton Mining Division B.C. and are in good standing through to 1993. Figure 1 outlines the claim block which consists of 75 contiguous units.

LOCATION AND ACCESS

The Club claims are located some 20 kilometers north from the village of Lac La Hache, in the Cariboo region of British Columbia.

Access is via good gravel roads from the town of Lac La Hache along the Spout Lake and Murphy Lake road to Rail Lake where a secondary road, the 1700 road turns eastward. This logging road cuts the claim block in the middle giving good access to the grid.

Lat. 51° 58' N, Long. 121° 24" W, N.T.S. 92 P/14W.

SURVEY GRID

The survey grid consists of lines turned off at right angles from an east to west baseline which was placed along the northern boundary of Club 7. The lines are spaced 100 meters apart and numbered at 50 meter intervals. The grid lines are numbered from 0 W to 1800 W. Some 18 kilometers of survey grid was surveyed by the induced polarization method on lines spaced 200 meters apart.

REGIONAL GEOLOGY

The regional geology for the area is depicted by G.S.C. Map 1278A, Bonaparte Lake Map Area, 1972. The Club claims are situated near the eastern edge of the Intermontane belt, a northwesterly trending assemblage of Upper Triassic-Lower Jurassic volcanic rocks. This belt of rocks comprises units of the Nicola, Takla and Stuhini Groups and is often referred to as the Quesnel Trough.

Nicola volcanic rocks of Triassic age underlay the property. They have been mapped as augite, andesite flows and breccia; tuff, argillite, greywacke and grey limestone. The Takomkane granitic batholith of Triassic-Jurassic age lies to the east of this sequence of rocks.

An extensive cover of Upper Tertiary (Miocene-Pliocene) basaltic lavas of the plateau type lie to the west. The eastern edge of the Intermontane belt contains a linear band of alkalic stocks composed of diorite, monzonite and syenite. These stocks intrude the volcanic strata and commonly alter the country rocks. They are hosts for several alkalic suite porphyry mineral deposits such as Copper Mountain, Afton, Cariboo-Bell and the recently discovered QR gold Mine. The QR discovery is reported to contain some 6500 kilograms of gold reserves.

LOCAL GEOLOGY

The claims lie north of a southwestern edge of a large magnetic arc some 10 miles in length. Geological investigation has shown this anomaly to be caused by magnetite rich alkalic stocks and dikes. Initial investigations in the area began in the late 60's when regional soil sampling located extensive evidence of copper mineralization.

To date copper and gold mineralization has been uncovered on claims to the north, northeast and east of the Club claims.

PREVIOUS WORK

The 1988 exploration work was completed under the name of Tide Resources Ltd and is described in a report dated March 15, 1989. This program located a number of high gold soil samples of over 1000 ppb. Trenching near the road at 1300W 110S detected altered gabbroic rocks with low copper and gold values. A trench near 700W 1300 along the road uncovered potassic alteration in andesite/syenite which gave 5m of .25% and 5m of .11%

copper with no gold values. Induced polarization surveying was recommended.

INDUCED POLARIZATION SURVEY

The induced polarization survey was conducted utilizing a Scintrex IPRX-8 receiver coupled to a Huntec MK IV 2.5 kw transmitter deployed in a pole-dipole array with a separation "a"=75m and n-spacings of 1 and 2. Approximately 18 kilometers of line was surveyed.

An 8 second cycle time was used with a delay of 240 millise-conds. The overvoltage discharge is read, integrated over a time slice, normalized with the primary voltage and is presented as chargeability in milliseconds. The physical parameters which govern the flow of the primary voltage are shown as apparent resistivity in ohm-meters.

DISCUSSION OF RESULTS

Figure 2 shows the chargeability data for separation n=2 upon which have been superimposed outlines of the high gold, copper and magnetic intensity values. Figure 3 depicts the apparent resistivity values in plan form for n=2 while Figure 4 displays the chargeability. Figures 5 to 14 show pseudo sections for resistivity, chargeability and calculated metal factor for each line.

The survey outlined a strong chargeability anomaly coincident with high apparent resistivity data. The sections indicate this anomaly continues to depth. Values of 30 to 40 milliseconds suggest up to at least 10% chargeable materials by volume.

The 1989 report shows that the anomalous geochemical values have a linear pattern which suggests glacial distributed material. A gravel pit near the road junction, line 1000 W, has a 10 m bank while a shallow cut just south of this junction has bedrock and trench 4 along this road at 1300 W did not reach bedrock.

The rock types noted to date on the property are variable. Trench 5 just south of the baseline on line 1300 W contains altered gabbro. This trench is on a magnetic high coincident with moderate chargeability numbers. Dark argillaeous rocks were uncovered in the cut just south of the road junction. To the south, at line 700 W 1300 S in trenches 1, 2 and 3 the country rocks are potassic altered andesite flows and tuffs with minor syenite. A 1.5 m sample of malacite stained rock assayed 3087 ppm copper, 4.4 ppm silver and 11 ppb gold in trench 1.

The strong chargeability anomaly to the north of the baseline is surrounded by rocks of high magnetic susceptibility. Prospectors Fuller and Kriberg the original property vendors reported finding an outcrop of malacite stained syenite near what would be the western area of this anomaly. Arsarco mapping on Peach Lake Resources to the immediate east report limestone and greywacke.

The induced polarization data show that the high chargeability numbers are associated resistivity highs. Resistivity highs are usually indicative of syenites or unaltered volcanics or limestones rather than sediments or prophyllitic altered volcanics. The high gold values of over 1900 ppb gold with little associated copper values suggests that the gold may be have a pyrite association rather that being with chalcopyrite.

The Peach Lake Resources side of the grid covering the large chargeability high contains copper values up to 700 ppm. Topographic drainage suggest that they are associated with this anomaly. Line 1800 W appears to close this feature off to the west, however a new chargeability source is developing around 400 S.

CONCLUSION

The induced polarization data discussed in this report outlines a strong chargeability source which extends to depth and may be caused by some 10% chargeabile materials by volume. A smaller less intense zone lies in the southern portion of the survey area. Both zones are underlain by apparent resistivity highs. The high gold soil geochemical results show no particular bias to the chargeability trends. The area has known areas of deep overburden which would obscure any geochemical source, yet leave traces in the glacial detrital material.

RECOMMENDATIONS

It is therefore recommended that the two areas of high chargeability be tested by diamond drilling. The moderately high chargeability values on line 1800 W on the southern portion of the survey grid suggest a continuation of the zone to the west. Thus the general exploration work of line cutting, soil sampling magnetic and vlf electromagnetic surveys should be expanded to cover the complete claim block.

Respectively, whited, or Glen F. White E. Ing.

STATEMENT OF QUALIFICATIONS

- I, Glen E. White, with a business address of 11751 Bridgeport Road, Richmond B.C. do hereby certify that:
- 1) I am a consulting geophysicist registered with the Association of Professional Engineers of British Columbia since 1977.
- 2) I hold a B.Sc. degree (1966) in geology and geophysics from the University of British Columbia.
- 3) I have been practising my profession as a geophysicist-geologist for over 25 years.
- 4) I have practical geological geophysical experience in all the geological provinces of Canada and the southwestern United States.
- 5) I have based this report on a review of available Geological publications and exploration reports.
- 6) A letter of consent is required before this report can be used in whole or in part for publication or any filing statement or Statement of Material Facts.

GLEN E. WHITE B.Sc

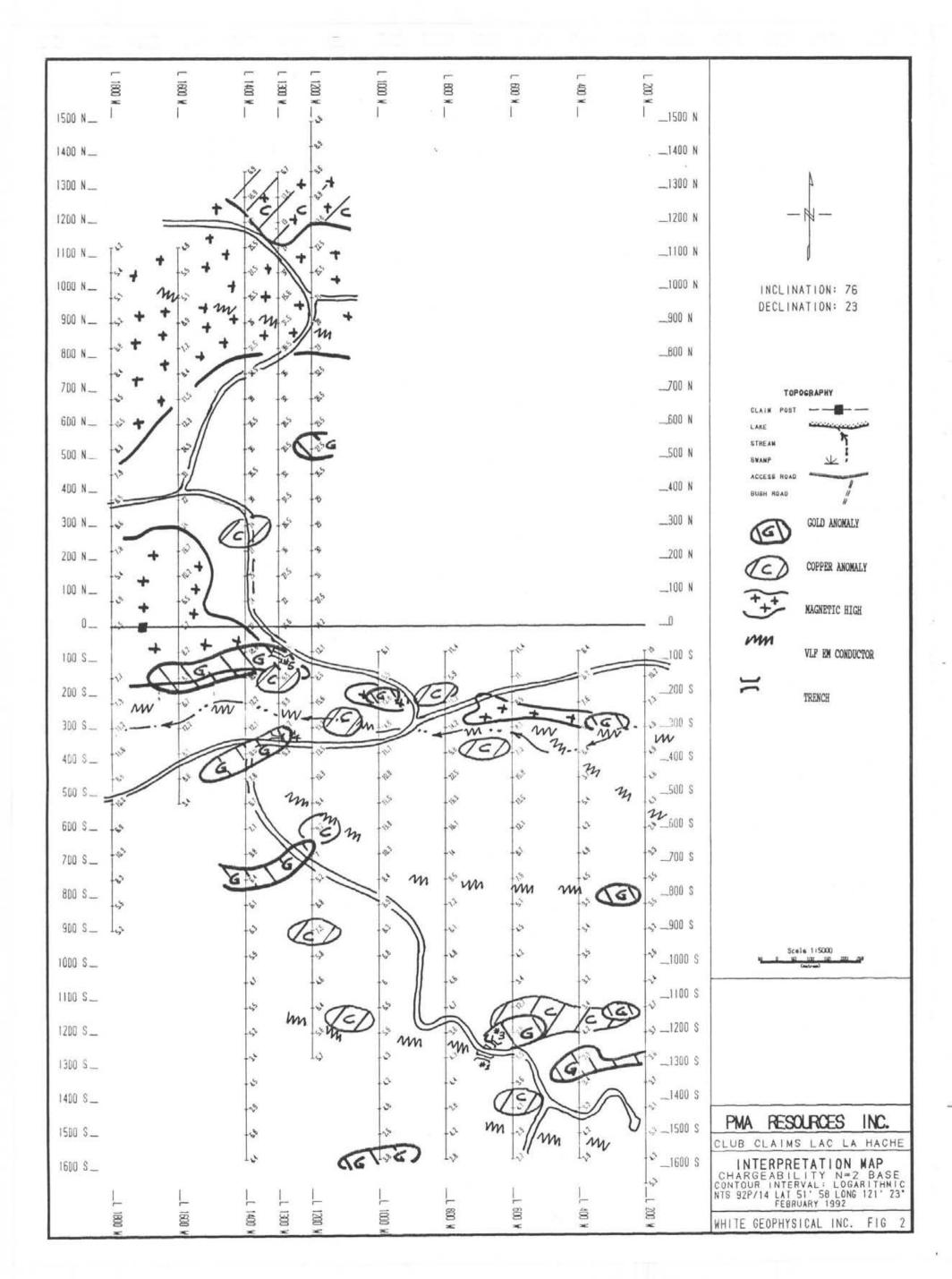
COST BREAKDOWN

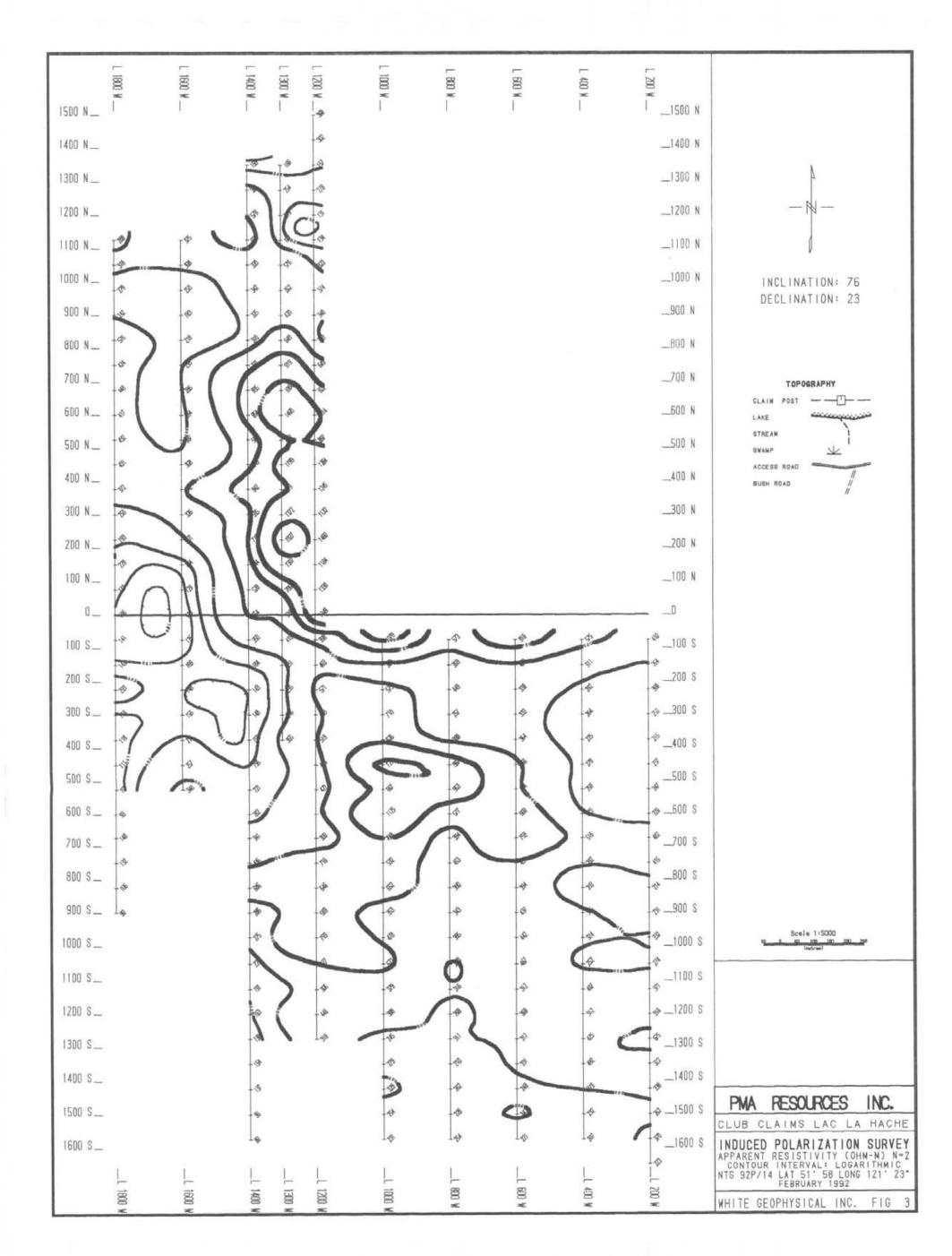
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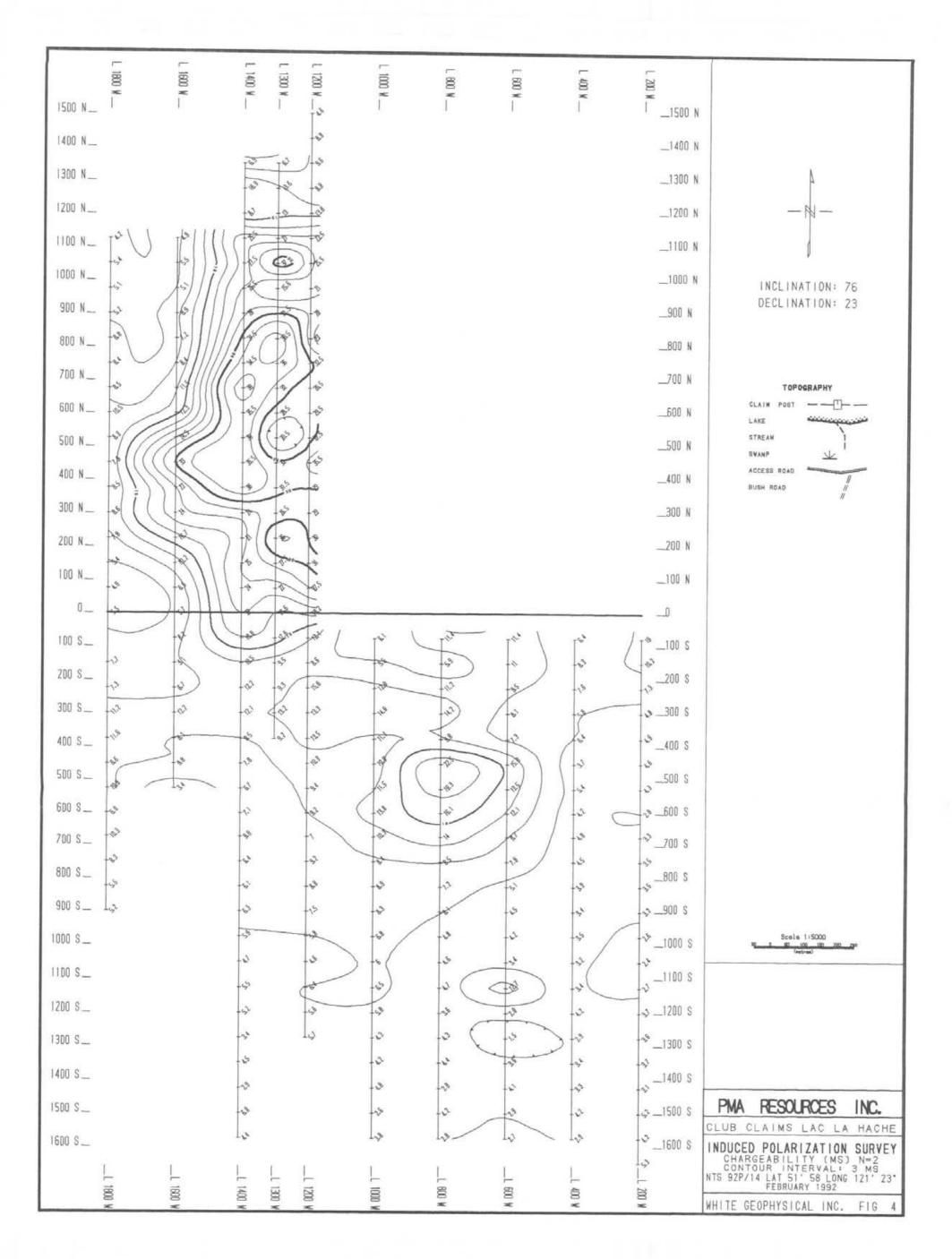
PERSONNEL	
B. Robertson	\$3,850
G. MacKenzie	\$3,250
J. Twomey	\$2,750
J. Perry	\$2,250
Glen E. White P.Eng	\$5,700
Meals and accommodations	\$3,225
Vehicles two 4x4 snow access	\$1,950
Snow plowing Phils Drilling	\$675
Instrument lease induced polarization	\$3,300
Data processing and plotting	\$850
Interpretation & reports	\$2,200

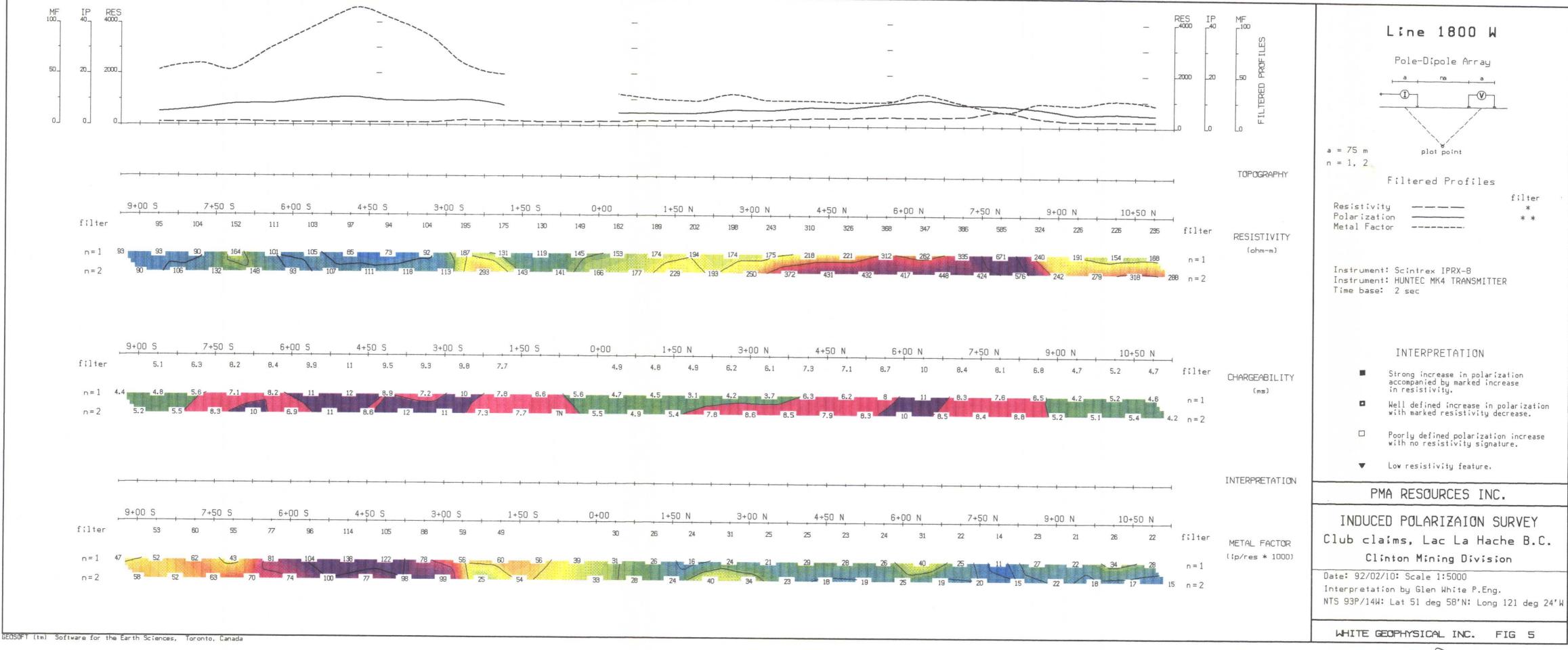
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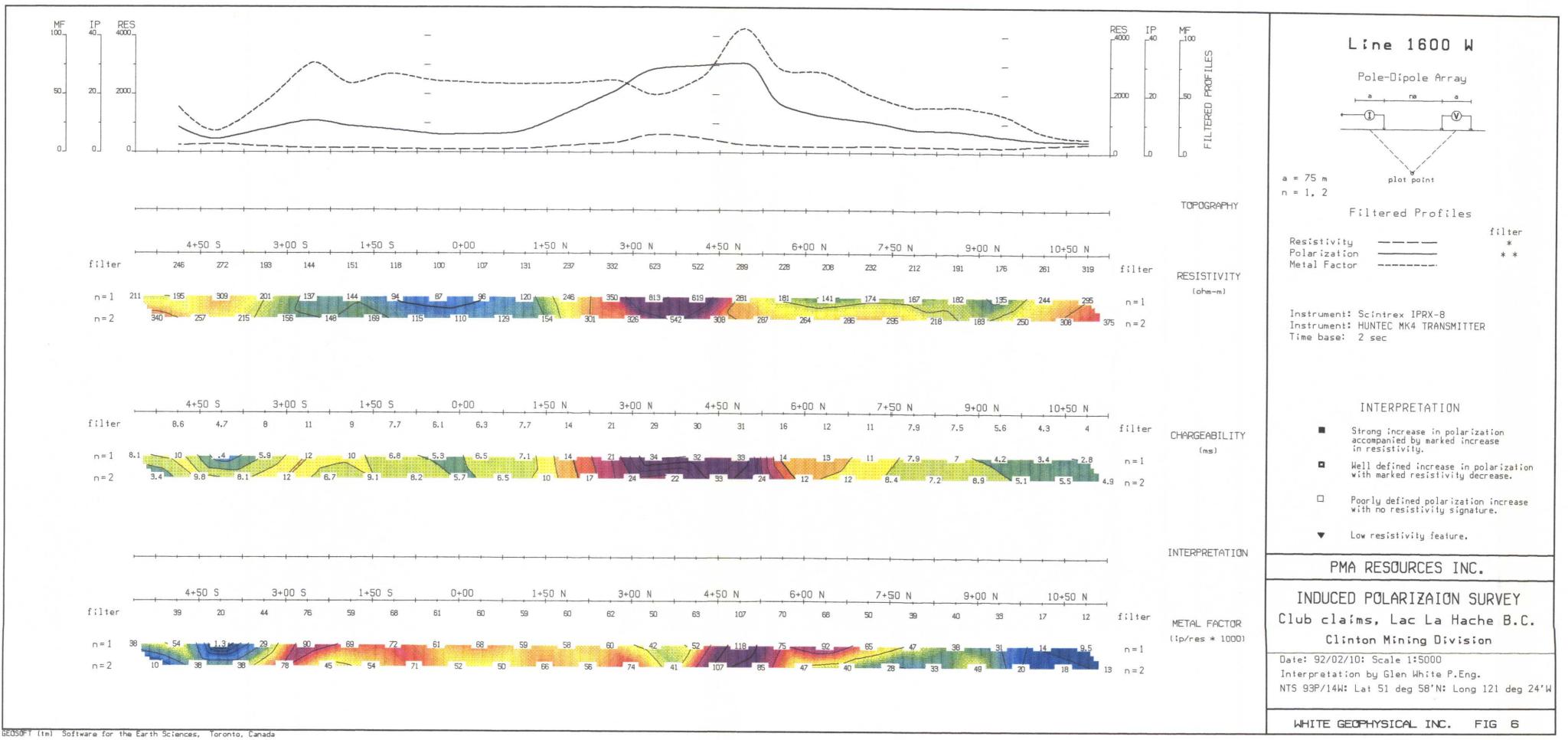


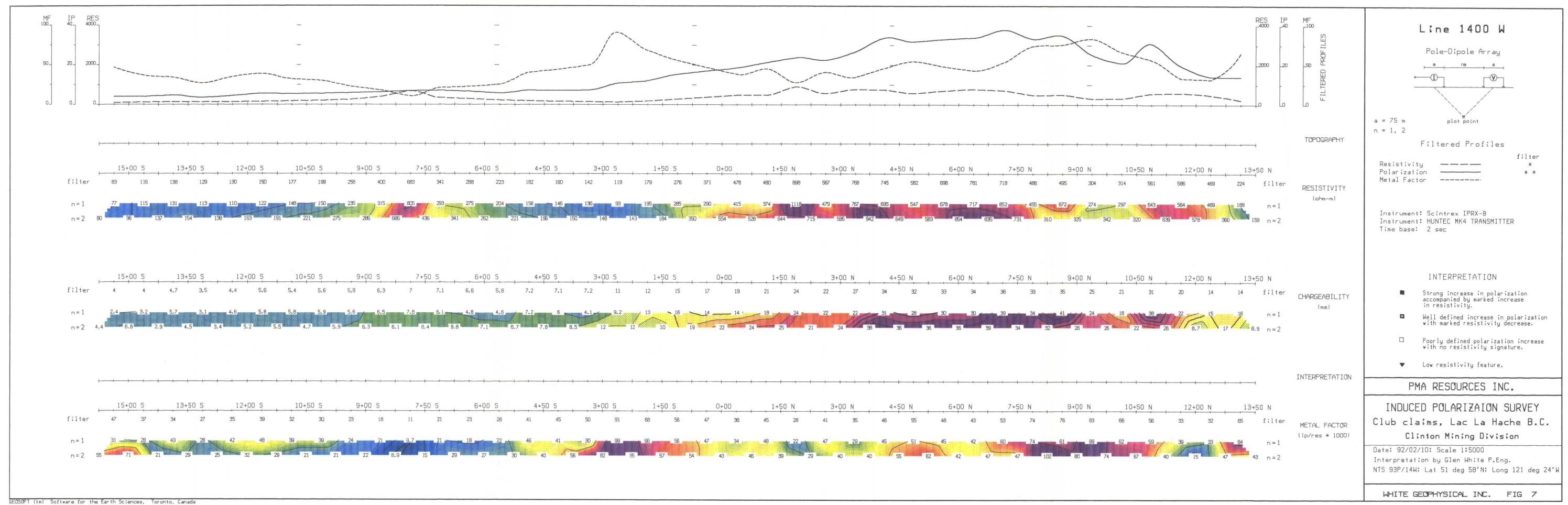


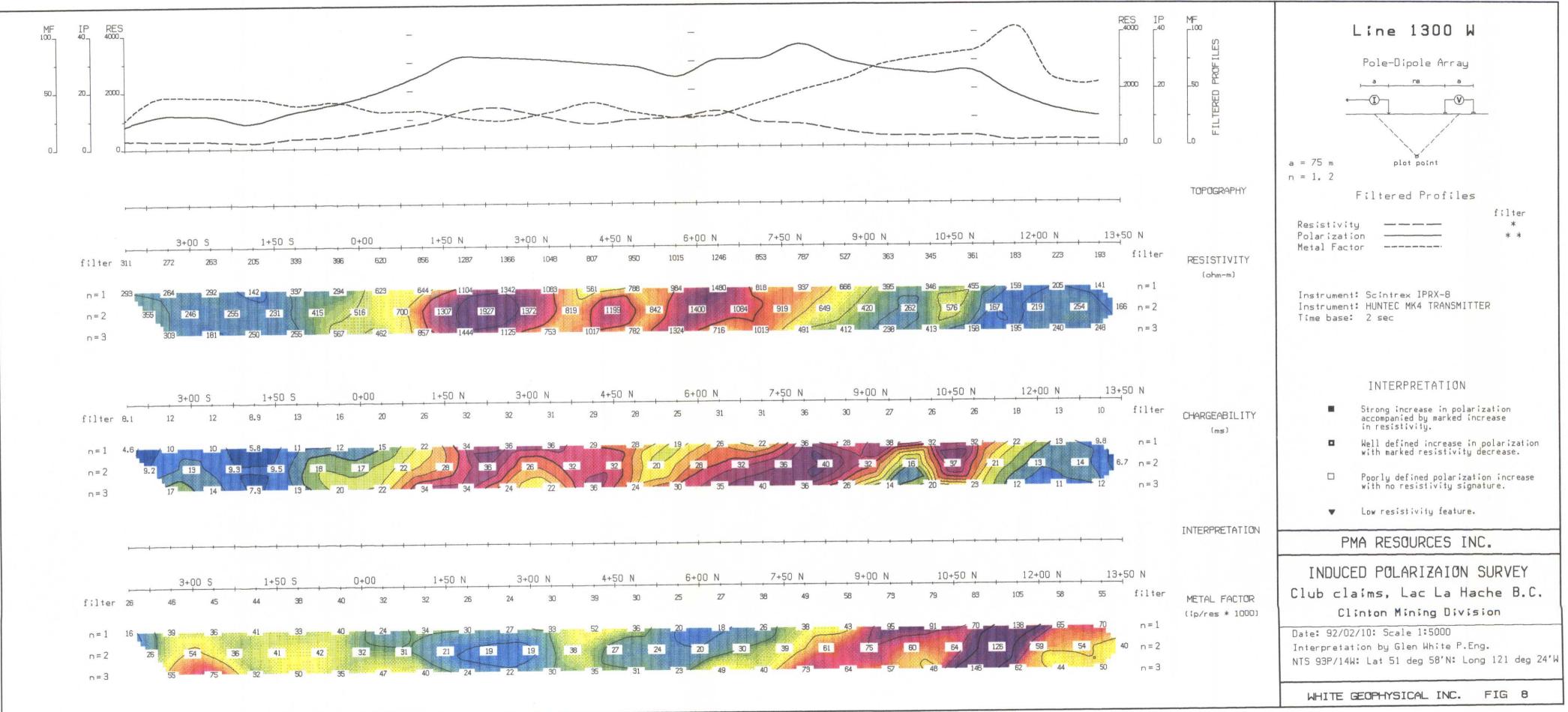






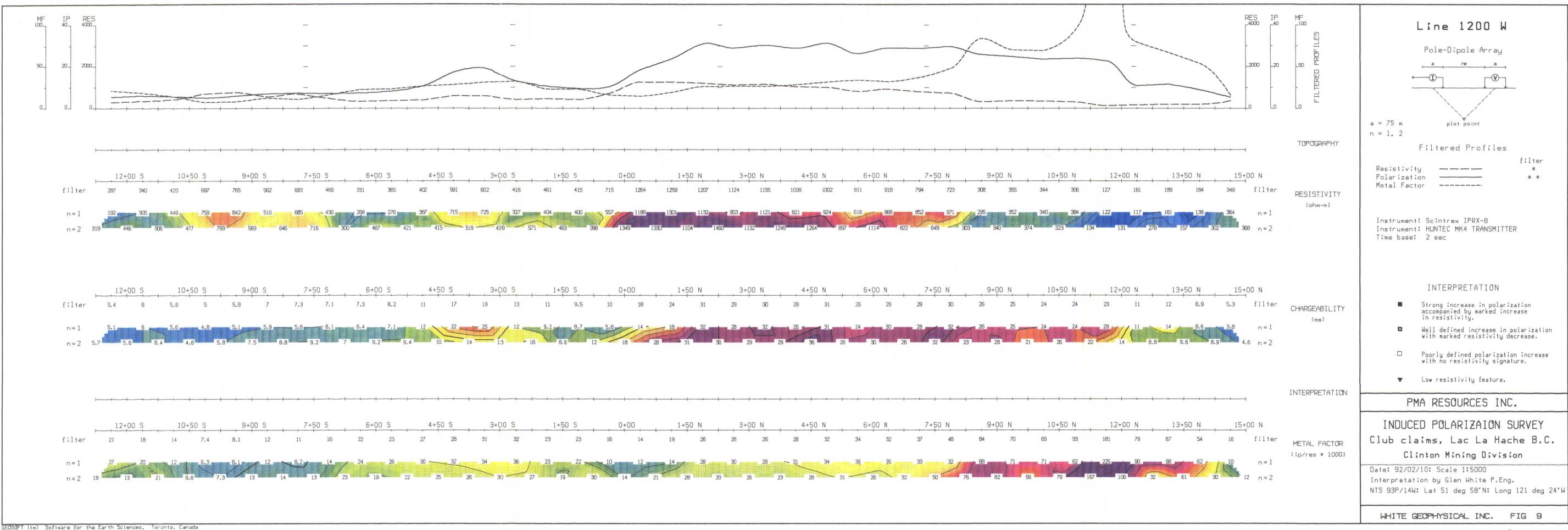




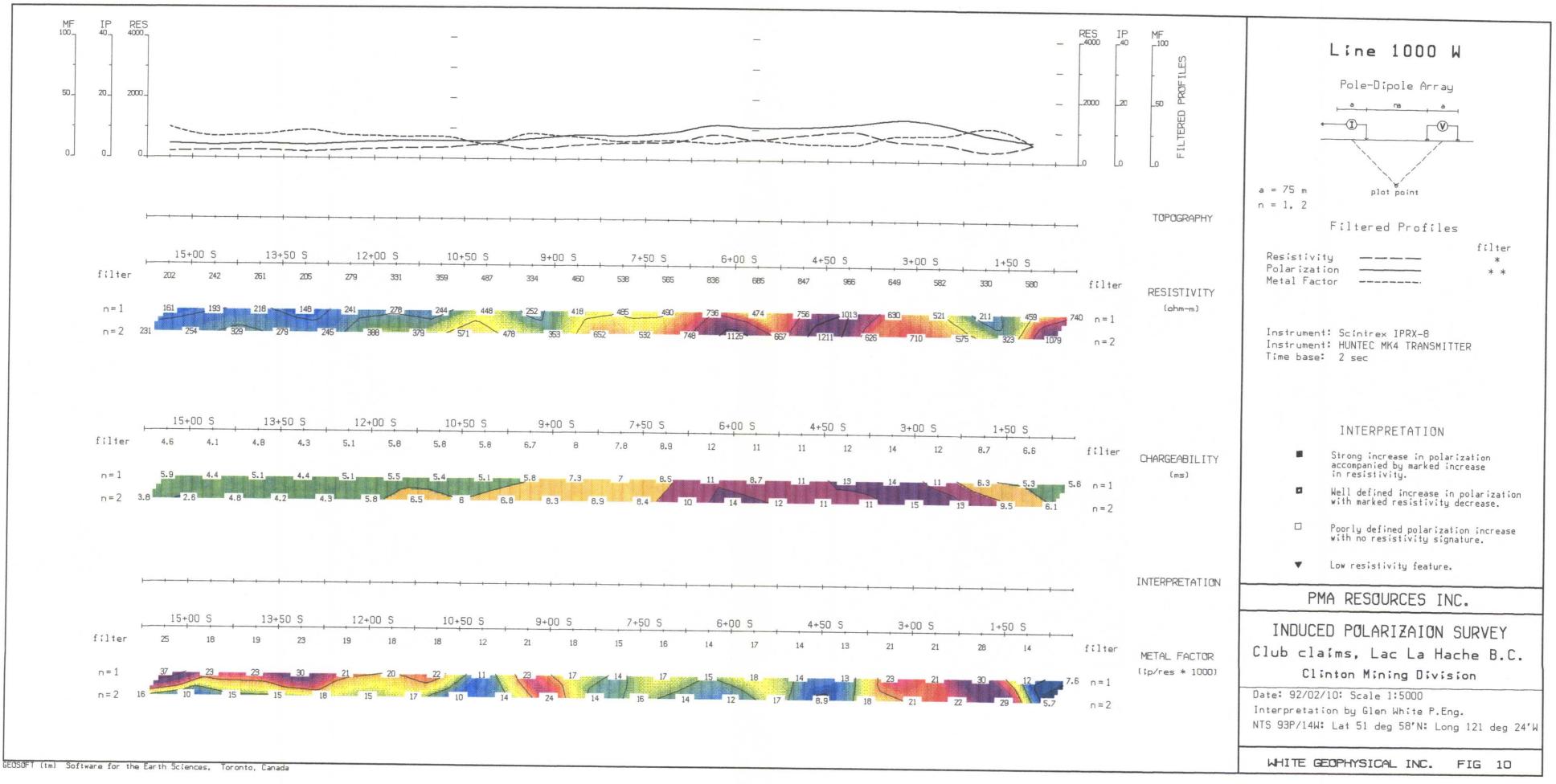


GEOSOFT (tm) Software for the Earth Sciences, Toronto, Canada

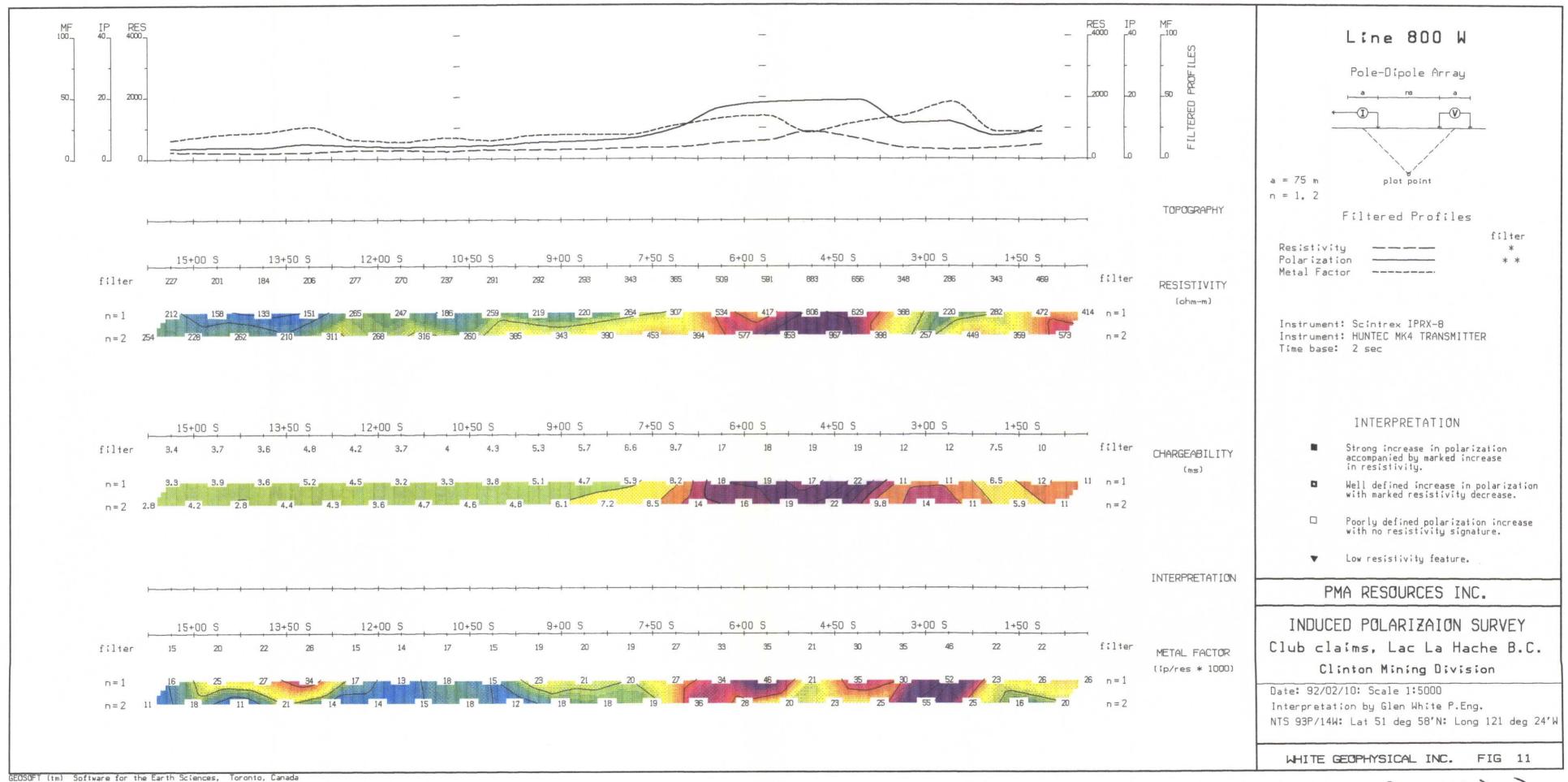
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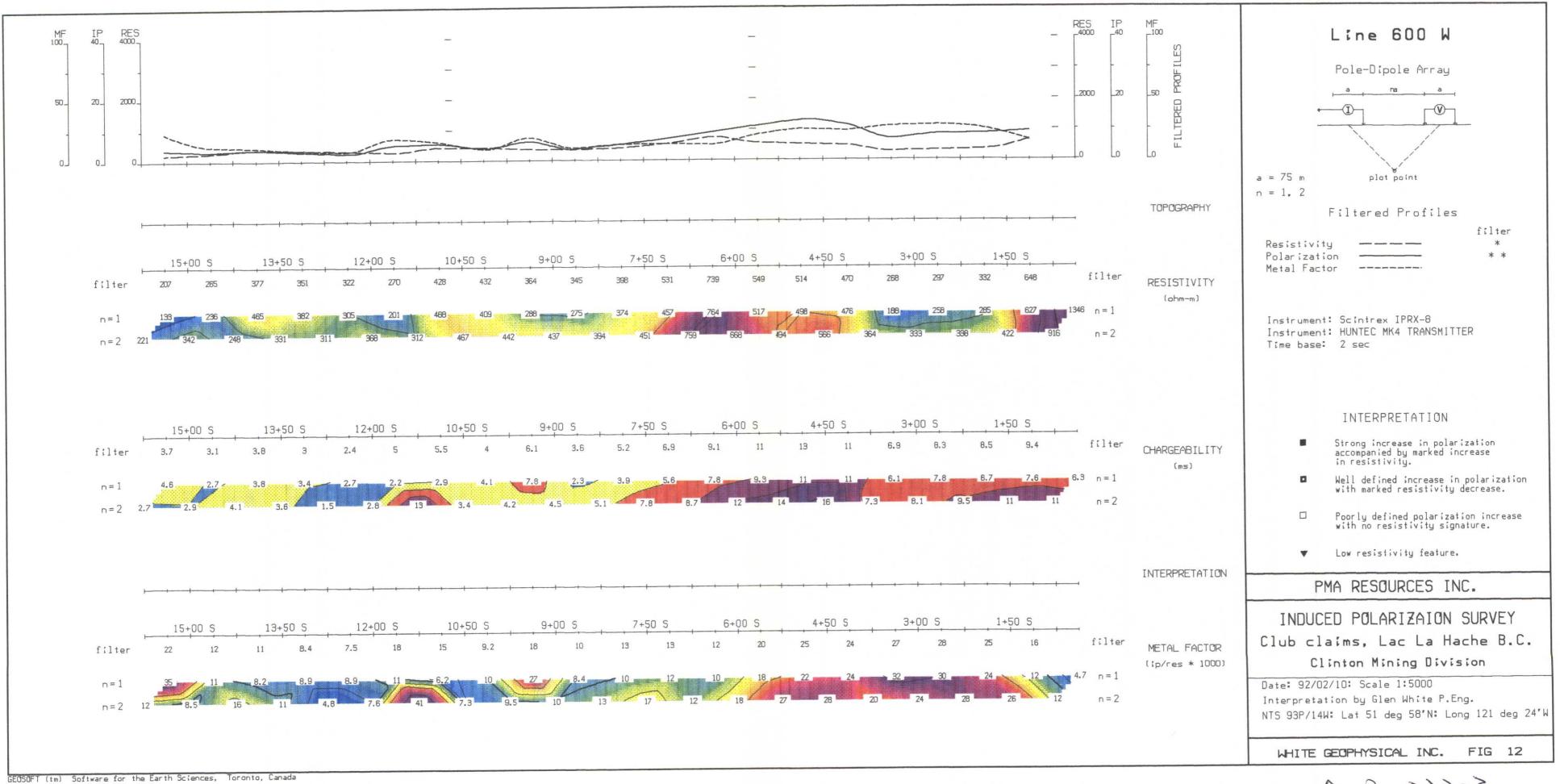
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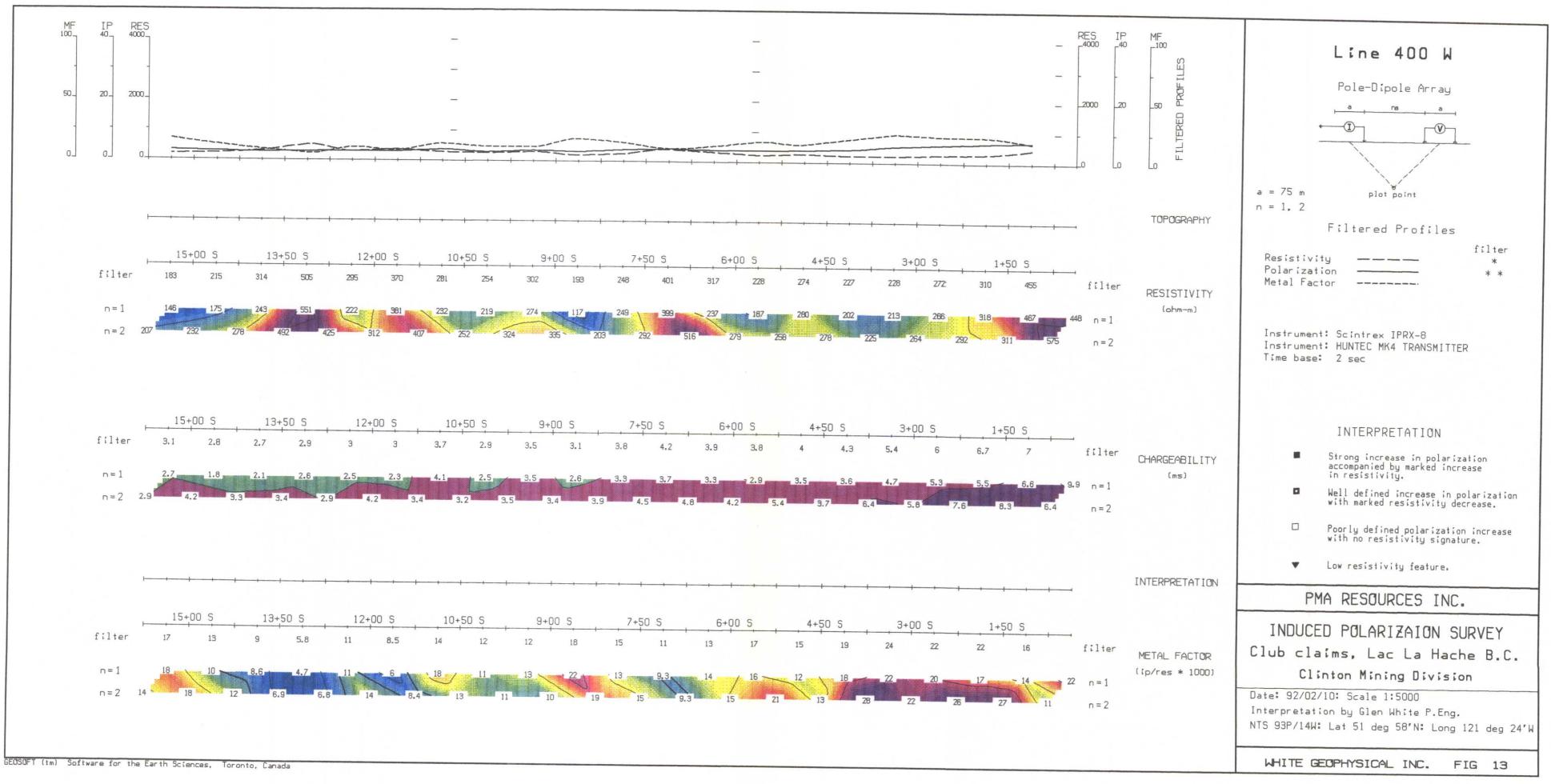
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