# NEWHAWK GOLD MINES LTD.

Geophysical Report
on a
Vector Pulse Electromagnetometer Survey

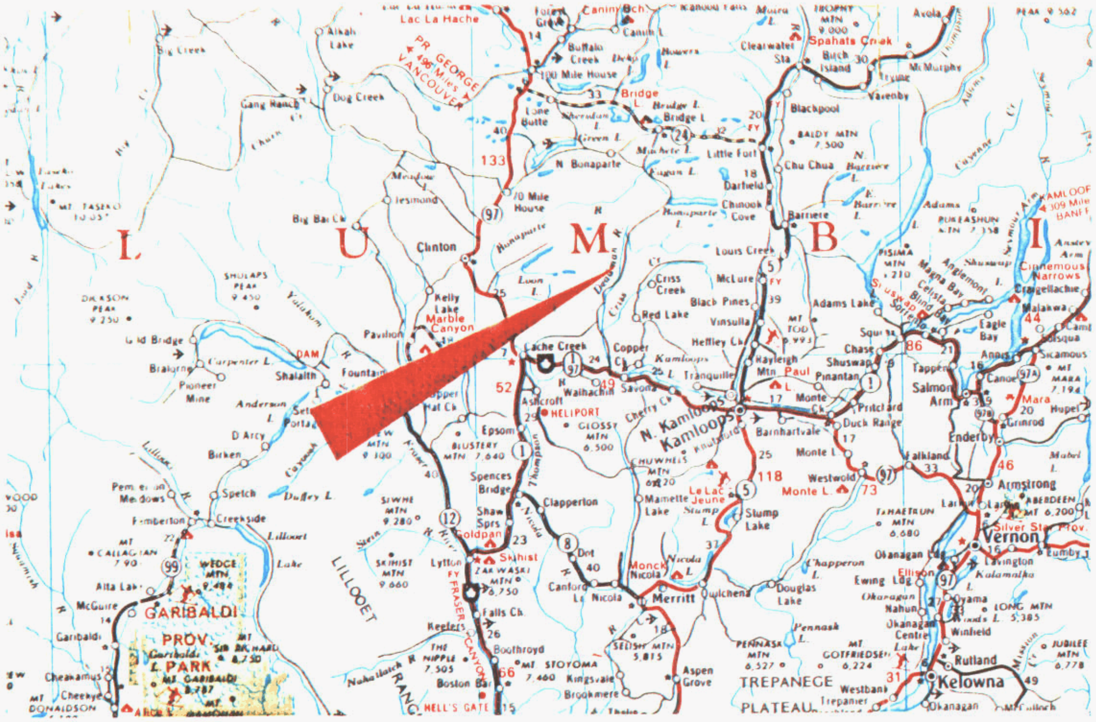
Sno Mineral Claims, Clinton Mining Division
Lat. 51°05' N   Long. 120°53' W   NTS 92P/2

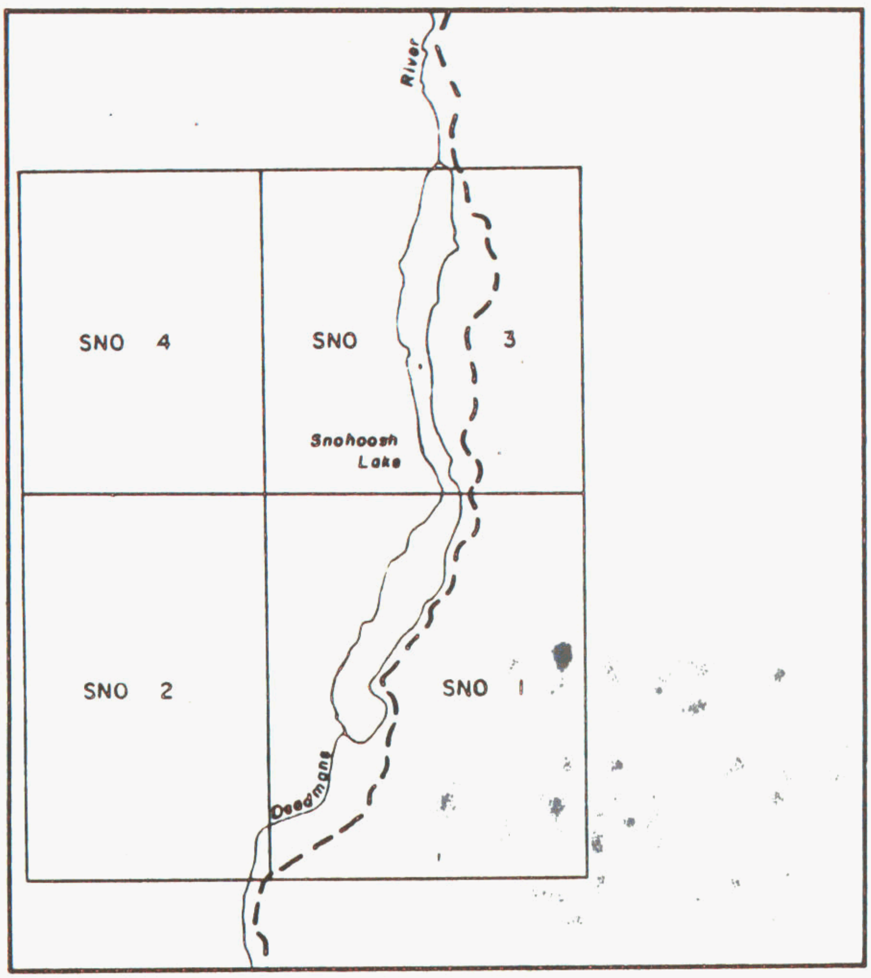
AUTHORS: E.Trent Pezzot B.Sc., Geophysicist

Glen E. White B.Sc., P.Eng.,
Consulting Geophysicist

DATE OF WORK: February 25,1981-March 4,1981

DATE OF REPORT: March 12, 1981




# NEWHAWK GOLD MINES LTD.

## SNO CLAIMS

## LOCATION AND CLAIMS MAP

Glen E. White
geophysical consulting
& services ltd.

FIG. 1

# CONTENTS



## Illustrations

## INTRODUCTION

From February 25, 1981 to March 04, 1981 Glen E. White Geophysical Consulting and Services Ltd. conducted a test vector pulse electromagnetometer survey across a portion of the SNO claims on behalf of Newhawk Gold Mines Ltd. The survey was undertaken to locate and delineate any conductive units in the area of strong chargeability and coincident copper, zinc and molybdenum soil geochemistry anomalies.

## PROPERTY

The property consists of the SNO 1-4 claims, record numbers 847-850 recorded on August 05, 1980. They comprised 63 contiguous units as shown on Figure 1.

## LOCATION AND ACCESS

The property straddles Snohoosh Lake which is located approximately 50 km northwest of Kamloops, B.C. in the Clinton Mining Division at latitude 51°05' N and longitude 123°55' W in NTS 92P/2.

Access is via a good gravel road for approximately 30 km up the Deadman River valley north from highway 97. The turnoff for this gravel road is approximately 6 km west of Savona, a small community at the west end of Kamloops Lake.

## GENERAL GEOLOGY

The general claims are illustrated on Map 1278A in Memoir 363 by Campbell and Tipper, 1971. The majority of the claim group is underlain by plateau basalt of Miocene age. A window in these recent flows is created by the valley of the Deadman River. The basalts lie on top of the Deadman River formation which is comprised of diatemaceous earth and pozzlamic ash. This formation occurs on the east side of Snohoosh Lake. Below this formation Triassic Nicola volcanics are exposed in places along the valley. Mr. Macleod has mapped thin bedded light weathering argillites and limey argillite on the west side of the lake around the showings. He considers these sediments to more likely be part of the Nicola series than the Deadman formation. At the north end of the lake granitic rocks are exposed. The mineralization consists or argentiferous and auriferous pyrite and chalcopyrite with minor values of molybdenum and tungsten in lenses of garnet skarn in the limey sediments.

## PREVIOUS WORK

As known to the authors at this time J.W. Macleod, P.Eng. described the mineralization of the claims area in a preliminary report dated September 17, 1980. On the recommendation of this report a geophysical exploration program consisting of line cutting, geochemical soil sampling, magnetometer, VLF - electromagnetometer and induced polarization surveying was conducted on behalf of Newhawk Gold Mines Ltd. by Glen E. White Geophysical Consulting and Services Ltd. The results of this program are presented in a report by Glen E. White, B.Sc., P.Eng. dated December 22, 1980.

## SURVEY GRID

The initial grid was established with north-south lines spaced 50 meters apart and numbered at 50 meter intervals. Based on the results of the previous survey the projected strike of a conductive target necessitated that a new grid orientated east-west be established. Using the pre-existing grid as control and retaining the same numbering scheme, east-west lines were established at 100 meter spacing from 400 N to 300 S inclusive and extending from 400 W to 250 E with a 25 meter station interval.

VECTOR PULSE ELECTROMAGNETOMETER SURVEY

The pulse electromagnetometer system is a time domain E.M. system which can be used in the borehole mode, standard horizontal loop mode or deep penetrating vector mode.

The primary field for the horizontal loop survey is obtained from a transmit loop 9 meters in diameter laid out horizontally on the ground and energized by a pulse of 20 amps at 24 volts with an on-off time of 10.8 or 21.6 ms. The receiver coil is generally spaced 25 - 100 m from the transmitter loop. Both are moved simultaneously from station to station. The secondary field signal from the receiver coil is sampled and averaged for 11 seconds and then stored for readout. Eight samples of the secondary field are obtained with increasing window widths during the primary field off time. Time synchronization is by radio link or cable.

The eight channels of secondary field information are equivalent to a wide spectrum of frequencies from approximately 2$KH_z$ to 16$H_z$ which allows for determination of overburden. Since the time derivative of the secondary field is measured directly during the primary field off time, the pulse method is relatively free of geometrical restrictions, such as topography interference and coil alignment.

The primary field for the vector EM technique is obtained from a LSL (Large Scale Loop) of 150 m (492 ft.) per side which is energized with a current of 25 amps at 24 volts. A resultant vector can be obtained by vector addition of the horizontal and vertical components of the secondary field. A right angle to this resultant points to the eddy current position. See Appendix for diagrams. Additionally, detailed conductor information can be obtained from the analysis of the individual component information.

## DISCUSSION OF RESULTS

From February 25 through March 03, 1981 inclusive, 4.85 line km of survey grid was established and 3.325 km of vector pulse electromagnetometer (PEM) survey was conducted over a portion of the SNO claims. One transmission loop was set up on the eastern shore of Snohoosh Lake and seven east-west lines were surveyed as shown on the PEM interpretation map, Figure 2. Horizontal and vertical components were analyzed from both Primary Field Normalized data (Figures 4 to 19) and Constant Gain data (Figures 20 to 35).

Three conductive trends labelled A, B, and C and three isolated conductive responses were observed as shown on Figure 2. The most prominent feature noted is labelled Conductor A and is located beneath Snohoosh Lake. It appears to be a highly conductive and consistent zone as evidenced by different type responses in the different time channels which remain consistent on a line to line basis. The strength of the response suggests a graphitic zone at approximately 75 meters depth but because the feature so closely follows the shoreline of Snohoosh Lake it might possibly reflect a highly conductive fault zone which is controlling surface topography. Only one transmission loop was set up for this test which makes dip and width estimates unreliable but the feature appears to be relatively narrow and dip steeply to the east.

Two weaker conductors are observed to the west of Snohoosh Lake and are labelled B and C. Conductor B occurs at approximately 50 meters depth, extends from line 400 N, station 25 W to line 00 N, station 175 W and is considered open to the north. It roughly parallels and occurs up slope from copper and zinc soil geochemistry trends and is coincident with chargeability and resistivity lineaments. A parallel fault is interpretted 75 meters east of this zone between lines 400 N and 200 N.

Conductor C extends from line 00 N, station 100 E to line 300 S, station 125 W and is considered open to the south. Depth is similiar to that of conductor B but increases slightly to the south. The zone is parallel to the western edge of copper and zinc soil anomalies and a chargeability high. Fifty meters west of conductor C there are weak indications of a parallel fault which may become conductive to the south.

Three isolated conductive responses are observed. The strongest occurs on line 300 S at station 125 E and is coincident with copper and zinc soil anomalies and a chargeability high. The anomaly is presently considered open to the south and east. The other isolated conductors occur on line 200 S at stations 175 W and 25 E. Weaker copper and zinc geochemical values correlate to these features which are considered closed in all directions.

Fault zones appear to parallel the conductive trends as shown on Figure 2 indicating a possible structural relationship between the features. There is a strong possibility of an east-west trending fault in the vicinity of line 00 N. Both the copper and zinc soil geochemistry anomalies are displaced in the area and the VLF-EM and induced polarization defined resistivity trend suggests a near surface east-west lineament. If present, this fault infers that conductors B and C are likely the same feature. No direct evidence of this fault is observed on the PEM data since the feature is nearly parallel to the survey lines and the orientation of the primary field provides minimum coupling to east-west lineaments in the surveyed area.

A composite interpretation map including results of all geophysical and geochemical surveys discussed in this report is presented as Figure 3.

## SUMMARY AND CONCLUSIONS

In late February and early March, 1981 Glen E. White Geophysical Consulting and Services Ltd. established 4.85 line kilometers of survey grid and conducted 3.325 kilometers of test vector pulse electromagnetometer survey over a portion of the Newhawk Gold Mines Ltd. Sno claims.

A very strong conductive response believed to be related to either graphite or a highly conductive fault plane or gouge was observed beneath Snohoosh Lake. In addition two weaker conductive trends and possibly associated fault zones were observed to coincide with copper and zinc soil geochemistry anomalies and induced polarization defined chargeability highs. VLF-EM and induced polarization resistivity trends along with geochemical trend displacements suggest an east-west trending fault in the vicinity of line 00N. If present this fault infers the two weaker conductive trends are part of the same feature. Three isolated conductors are observed: one near the lake edge on line 300 S station 125 E and the others on line 200 S at stations 175 W and 25 E. The former exhibits good correlation to geochemical and chargeability anomalies and is considered open to the south and east. The later two are near copper and zinc geochemical anomalies and are considered closed.

## RECOMMENDATIONS

Conductor A is the strongest response observed on the PEM data and undoubtedly represents a major lithologic unit or structural feature. Although it is unlikely a massive sulphide target it should be tested by diamond drilling to confirm its' composition. An estimate of the dip should be established by examination of the surrounding rock before finalizing the collar location, with the intention of intersecting the anomaly at a point approximately 75 meters below grid location 200 N, 140 E.

Conductors B and C give responses more typical of a lesser conductive, massive sulphide body and/or graphite zone and should be tested by diamond drilling. The conductors appear relatively consistent along their established strike although conductor C indicates a slightly higher conductivity and increased depth to the south. Terrain restrictions, correlation to chargeability and geochemical anomalies and cross faulting should be considered in the choice of drill locations.

The isolated anomaly on line 300 S at station 125 E shows excellent geochemical and induced polarization correlation and should be tested by diamond drilling.

Based on favorable or encouraging drill results the PEM survey should be extended to provide double loop coverage and extend the strike of conductor B to the north, C to the south and the isolated anomaly on line 300 S station 125 E to the south. When the transmission loop is in a favorable position a number of north-south lines should be surveyed to locate and delineate any east-west faulting in the vicinity of line 00N.

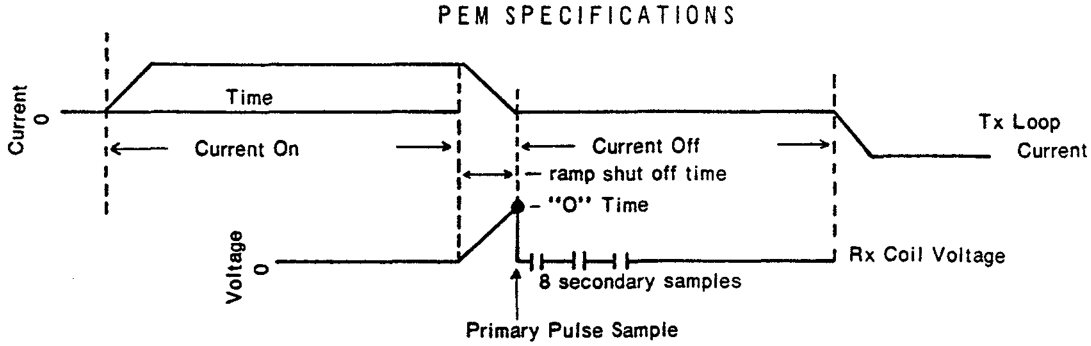
Respectfully submitted,

E. Trent Pezzot, B.Sc.

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — GLEN E. WHITE

Glen E. White, B.Sc., P.Eng.

# PEM SPECIFICATIONS




Current Off time: 9.4 ms
Current on time: 10.8 ms
Current shut off (ramp) time: 1.4 ms
Sample times (zero to centre of sample): .15ms, .45ms, .85ms, 1.45ms, 2.45ms, 3.75ms, 5.85ms, 8.85ms.

Sample width: 100 µs
Zero time set at drop off point of primary pulse

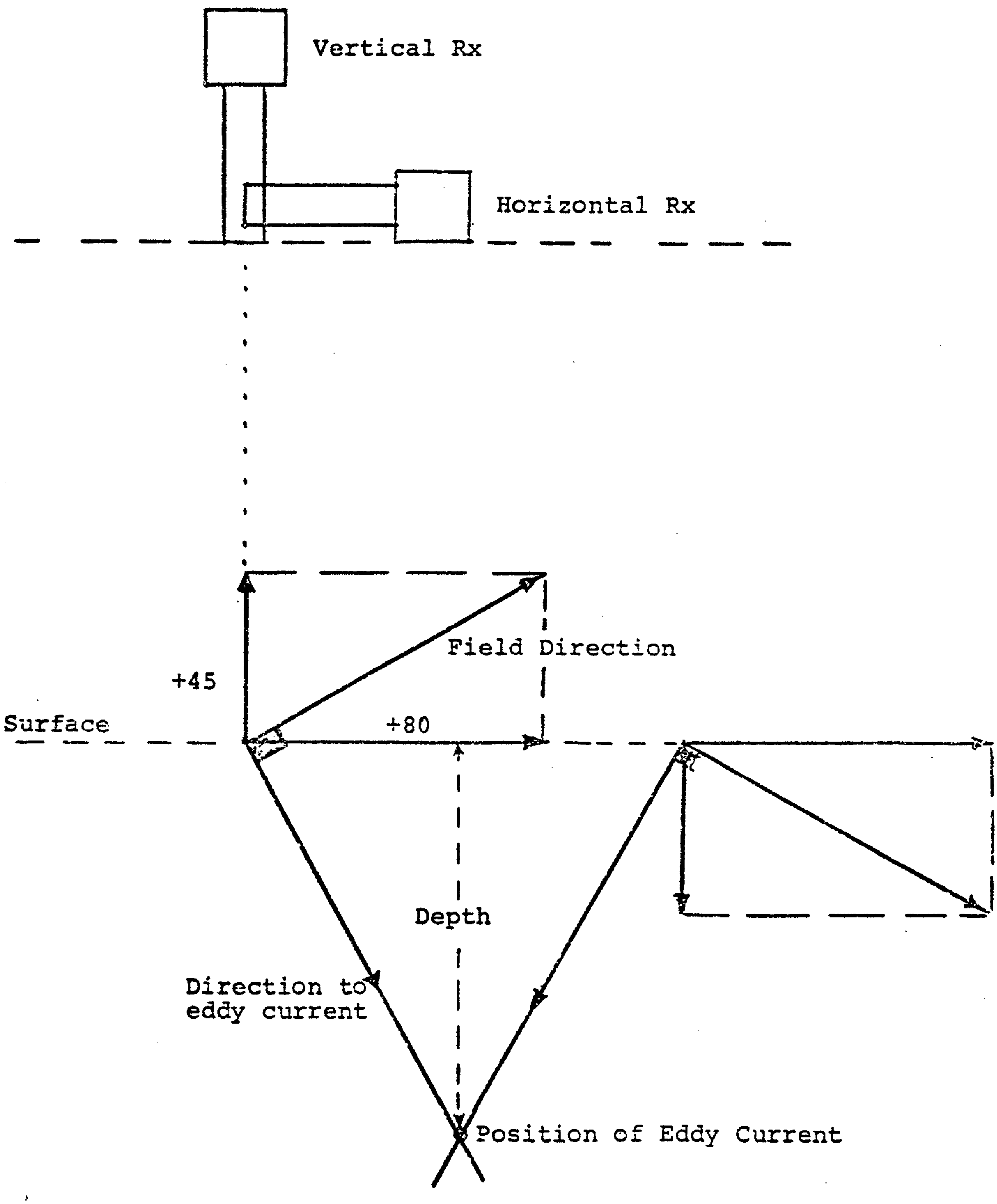
**TRANSMITTER** – Transmitter power and loop size may be increased to obtain increased penetration. Weight, portability and power capabilities of the control instrument are the limiting factors. The standard transmitter is designed to be carried by two men.

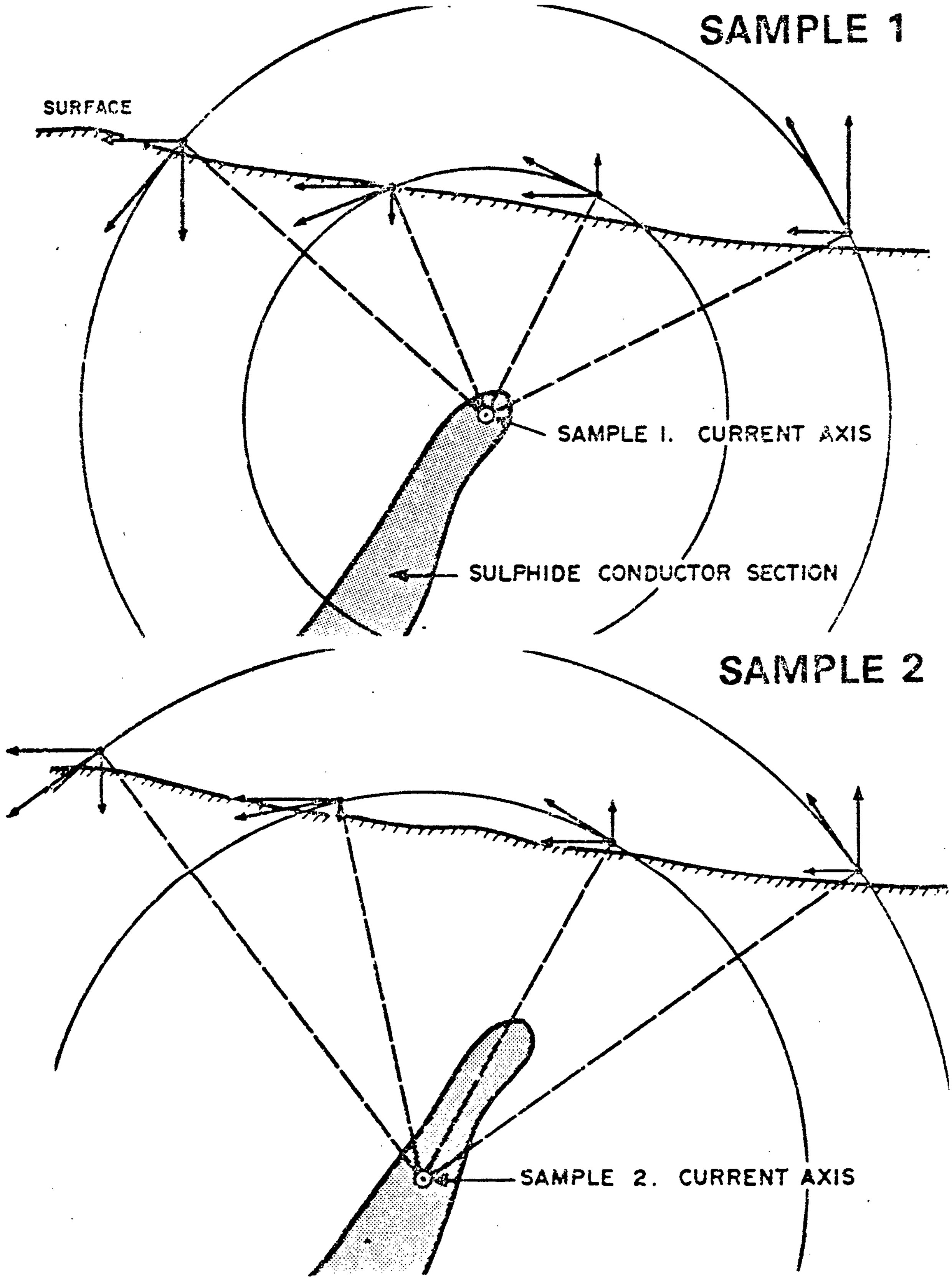
| | |
|---|---|
| Loop diameter | – minimum 4 meters (13 feet) |
| Loop current | – 15 to 20 amps |
| Loop applied voltage | – 24 volts |
| Loop output | – minimum 4500 amps x meter $^2$ |
| Loop weight | – 11.8 kilos (26 lb) |
| Control unit weight | – 10 kilos (22 lb) |
| Control unit dimensions | – 20.5cm x 25.5cm x 36.5cm (8" x 10" x 14.5") |
| Battery supply weight | – 18.1 kilos (40 lb) |
| Battery supply | – 2 of 12 volt, 14 to 20 ampere hour |

Timing control by radio synchronization

**RECEIVER**

- Receive coil dimensions: 55cm x 15cm (22" x 6")
- Receive coil weight: 4.5 kilos (10 lb)
- Preamplifier in coil
- Preamplifier batteries: 2 of 9 volt
- Receive coil tripod mounted
- Receiver measuring instrument dimensions: 28cm x 18cm x 21.5cm (11" x 7" x 9")
- Receiver measuring instrument weight: 6.3 kilos (14 lb)
- Timing control by radio synchronization
- Primary sample width: 100 µs
- Primary sample can be swept through primary pulse by means of a time calibrated pot
- Zero time set at primary pulse drop-off
- Secondary samples (eight of them) width: 100 µs
- Secondary samples time (zero to middle of sample): (1) .15ms (2) .45ms (3) .85ms (4) 1.45ms (5) 2.45ms (6) 3.75ms (7) 5.85ms (8) 8.85ms
- Automatic sampling for 5 seconds then all samples automatically stored
- Sample read out by means of meter
- Continuous sampling possible by switching function switch to "Continuous"
- Noise can be monitored by switching function switch to "Noise"
- Battery supply: 24 volt rechargeable, 2 of 12 volt Gel GC 12-15


Vertical Rx
Horizontal Rx
Field Direction
+45
Surface
+80
Depth
Direction to
eddy current
Position of Eddy Current




**Location of the Current Path in the Conductor**

## COST BREAKDOWN

| PERSONNAL | DATE | WAGES | TOTAL |
|---|---|---|---|
| M. Gray | Feb 25-March 4/81 | $165.00 | $1,320.00 |
| M. Mcphail | Feb 25-March 2/81 | $135.00 | $1,080.00 |

| | |
|---|---|
| Meals and Accommodations .............. | $ 640.00 |
| Vehicle all inclusive ................. | $ 560.00 |
| Instrument ............................ | $ 600.00 |
| Computer processing 16 Component plots. | $ 240.00 |
| Interpretation, drafting & reports .... | $ 750.00 |
| Total ............................ | $5,190.00 |

## STATEMENT OF QUALIFICATIONS

| | |
|---|---|
| NAME: | PEZZOT, E. Trent |
| PROFESSION: | Geophysicist - Geologist |
| EDUCATION: | University of British Columbia - B.Sc. - Honors Geophysics and Geology |
| PROFESSIONAL ASSOCIATIONS: | Society of Exploration Geophysicists |
| EXPERIENCE: | Three years undergraduate work in geology - Geological Survey of Canada, consultants. |
| | Three years Petroleum Geophysicist, Senior Grade, Amoco Canada Petroleum Co. Ltd. |
| | Two years consulting geophysicist, Consulting geologist - B.C., Alberta, Saskatchewan, N.W.T., Yukon, western U.S.A. |
| | Two years geophysicist with Glen E. White Geophysical Consulting & Services Ltd. |

# STATEMENT OF QUALIFICATIONS

| | |
|---|---|
| NAME: | WHITE, Glen E., P.Eng. |
| PROFESSION: | Geophysicist |
| EDUCATION: | B.Sc. Geophysics - Geology<br>University of British Columbia |
| PROFESSIONAL ASSOCIATIONS: | Registered Professional Engineer, Province of British Columbia |
| | Associate member of Society of Exploration Geophysicists. |
| | Past President of B.C. Society of Mining Geophysicists |
| EXPERIENCE: | Pre-Graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass |
| | Two years Mining Geophysicist with Sulmac Exploration Ltd. and Airborne Geophysics with Spartan Air Services Ltd. |
| | One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W. P. McGill and Associates |
| | Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions with Geo-X Surveys Ltd. |
| | Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd. |
| | Ten years Consulting Geophysicist |
| | Active experience in all Geologic provinces of Canada |

| STATION | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | GN | NF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line 300S, Loop A centred at 375E: | | | | | | | | | | | | | | | | | | |
| 150E | 270 | 110 | -30 | -86 | -87 | -63 | -33 | -18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 | 1 |
| 125E | 290 | 120 | -17 | -78 | -83 | -61 | -34 | -18 | -47 | -79 | -83 | -71 | -50 | -28 | -12 | -6 | 1 | 95 |
| 100E | 290 | 150 | 1 | -67 | -76 | -57 | -30 | -18 | -3 | -18 | -28 | -31 | -25 | -15 | -7 | -2 | 1 | 84 |
| 75E | 260 | 140 | 4 | -60 | -69 | -53 | -30 | -18 | -91 | -110 | -100 | -79 | -53 | -28 | -12 | -6 | 1 | 75 |
| 50E | 240 | 130 | 15 | -51 | -64 | -50 | -29 | -16 | -74 | -97 | -92 | -76 | -52 | -29 | -12 | -6 | 1 | 65 |
| 25E | 220 | 110 | 7 | -52 | -63 | -50 | -30 | -16 | -53 | -72 | -76 | -64 | -48 | -28 | -13 | -9 | 1 | 58 |
| 00E | 200 | 110 | 11 | -45 | -59 | -46 | -28 | -15 | -56 | -81 | -86 | -76 | -58 | -34 | -16 | -7 | 1 | 53 |
| 25W | 210 | 120 | 13 | -43 | -58 | -46 | -29 | -18 | -38 | -61 | -68 | -64 | -48 | -27 | -13 | -6 | 1 | 50 |
| 50W | 190 | 98 | 9 | -41 | -54 | -45 | -28 | -15 | -25 | -55 | -68 | -64 | -49 | -27 | -12 | -8 | 1 | 45 |
| 75W | 160 | 95 | 8 | -42 | -55 | -45 | -28 | -14 | -23 | -64 | -83 | -78 | -58 | -33 | -17 | -9 | 1 | 42 |
| 100W | 140 | 76 | 7 | -37 | -48 | -41 | -27 | -14 | -17 | -40 | -50 | -50 | -39 | -21 | -10 | -3 | 1 | 37 |
| 125W | 120 | 69 | 8 | -31 | -42 | -38 | -25 | -15 | -16 | -40 | -52 | -53 | -39 | -21 | -9 | -3 | 1 | 33 |
| 150W | 120 | 74 | 16 | -25 | -40 | -36 | -22 | -8 | -11 | -30 | -38 | -39 | -29 | -16 | -8 | -5 | 1 | 28 |
| 175W | 110 | 77 | 24 | -17 | -31 | -32 | -20 | -13 | -11 | -33 | -47 | -48 | -38 | -20 | -9 | -4 | 1 | 25 |
| 200W | 105 | 70 | 27 | -10 | -25 | -28 | -20 | -13 | -16 | -40 | -55 | -58 | -47 | -26 | -10 | -4 | 1 | 22 |
| 225W | 94 | 64 | 23 | -10 | -26 | -27 | -18 | -11 | -11 | -30 | -42 | -44 | -34 | -18 | -8 | -4 | 1 | 21 |
| 250W | 88 | 61 | 24 | -9 | -23 | -25 | -19 | -12 | -9 | -30 | -44 | -46 | -37 | -21 | -9 | -3 | 1 | 20 |
| Line 200S, Loop A centred at 375E: | | | | | | | | | | | | | | | | | | |
| 175E | 230 | 90 | 0 | -35 | -37 | -27 | -13 | -8 | -50 | -57 | -40 | -27 | -16 | -8 | -4 | -2 | 54 | 1 |
| 150E | 220 | 92 | 0 | -38 | -40 | -29 | -16 | -8 | -76 | -74 | -54 | -36 | -20 | -11 | -5 | -2 | 60 | 1 |
| 125E | 220 | 85 | -9 | -46 | -47 | -34 | -18 | -10 | -70 | -64 | -45 | -31 | -18 | -9 | -4 | -3 | 71 | 1 |
| 100E | 220 | 85 | -13 | -51 | -54 | -39 | -21 | -11 | -170 | -140 | -100 | -66 | -38 | -19 | -9 | -4 | 82 | 1 |
| 75E | 220 | 85 | -17 | -57 | -58 | -41 | -24 | -13 | -71 | -67 | -51 | -38 | -24 | -12 | -7 | -4 | 87 | 1 |
| 50E | 240 | 95 | -22 | -68 | -70 | -51 | -28 | -17 | -130 | -120 | -90 | -64 | -40 | -20 | -9 | -3 | 99 | 1 |
| 25E | 240 | 100 | -17 | -65 | -69 | -51 | -28 | -17 | -82 | -88 | -70 | -54 | -35 | -18 | -8 | -3 | 1 | 91 |
| 00E | 230 | 100 | -6 | -56 | -61 | -47 | -27 | -14 | -150 | -160 | -130 | -93 | -59 | -32 | -15 | -7 | 1 | 75 |
| 25W | 320 | 170 | 20 | -48 | -60 | -47 | -27 | -16 | -73 | -105 | -94 | -70 | -46 | -23 | -11 | -4 | 1 | 66 |
| 50W | 180 | 88 | -1 | -47 | -55 | -43 | -26 | -15 | -82 | -97 | -88 | -69 | -47 | -24 | -10 | -5 | 1 | 56 |
| 75W | 160 | 80 | 2 | -43 | -51 | -41 | -27 | -15 | -70 | -88 | -82 | -68 | -47 | -24 | -11 | -5 | 1 | 48 |
| 100W | 180 | 86 | 5 | -40 | -49 | -41 | -25 | -14 | -57 | -79 | -78 | -66 | -46 | -25 | -9 | -4 | 1 | 45 |
| 125W | 140 | 77 | 6 | -36 | -46 | -39 | -25 | -16 | -4 | -18 | -25 | -25 | -18 | -11 | -4 | -2 | 1 | 41 |
| 150W | 140 | 77 | 8 | -33 | -44 | -38 | -24 | -12 | -18 | -36 | -40 | -38 | -28 | -14 | -7 | -2 | 1 | 37 |
| 175W | 110 | 63 | 7 | -28 | -38 | -33 | -22 | -13 | -24 | -41 | -45 | -42 | -30 | -15 | -7 | -3 | 1 | 33 |
| 200W | 120 | 67 | 10 | -24 | -36 | -31 | -20 | -12 | -19 | -35 | -41 | -38 | -28 | -14 | -6 | -3 | 1 | 31 |
| 225W | 105 | 63 | 12 | -21 | -33 | -31 | -22 | -15 | -16 | -29 | -34 | -32 | -24 | -12 | -5 | -1 | 1 | 26 |
| 250W | 90 | 54 | 11 | -20 | -32 | -29 | -22 | -13 | -16 | -29 | -34 | -33 | -23 | -13 | -4 | -1 | 1 | 23 |
| Line 100S, Loop A centred at 375E: | | | | | | | | | | | | | | | | | | |
| 300E | -45 | -13 | -10 | -9 | -6 | -4 | -2 | -2 | -130 | -84 | -35 | -14 | -5 | -2 | -1 | -1 | 5 | 1 |
| 275E | -10 | 12 | -1 | -7 | -6 | -5 | -3 | -2 | -160 | -97 | -40 | -17 | -6 | -2 | -1 | -1 | 7 | 1 |
| 250E | 93 | 38 | 7 | -7 | -8 | -6 | -3 | -2 | -130 | -91 | -40 | -17 | -7 | -2 | -1 | -1 | 10 | 1 |
| 225E | 150 | 64 | 17 | -6 | -9 | -7 | -4 | -3 | -130 | -85 | -39 | -19 | -8 | -3 | -2 | -1 | 14 | 1 |
| 200E | 170 | 67 | 14 | -10 | -12 | -9 | -5 | -3 | -92 | -58 | -28 | -14 | -8 | -3 | -1 | -1 | 19 | 1 |
| 175E | 150 | 54 | 3 | -16 | -17 | -12 | -7 | -5 | -160 | -105 | -51 | -26 | -12 | -5 | -2 | -1 | 25 | 1 |
| 150E | 150 | 48 | -4 | -21 | -20 | -14 | -8 | -5 | -150 | -110 | -56 | -29 | -13 | -6 | -3 | -1 | 34 | 1 |
| 125E | 160 | 51 | -8 | -27 | -27 | -18 | -10 | -6 | -100 | -68 | -37 | -20 | -12 | -5 | -2 | -1 | 45 | 1 |
| 100E | 180 | 58 | -10 | -31 | -31 | -21 | -12 | -7 | -150 | -120 | -69 | -37 | -18 | -9 | -5 | -3 | 55 | 1 |
| 75E | 200 | 64 | -12 | -38 | -37 | -26 | -13 | -8 | -120 | -90 | -52 | -31 | -17 | -8 | -4 | -2 | 66 | 1 |
| 50E | 210 | 70 | -14 | -44 | -44 | -32 | -17 | -11 | -150 | -120 | -81 | -49 | -28 | -13 | -5 | -3 | 77 | 1 |
| 25E | 200 | 59 | -27 | -57 | -55 | -38 | -19 | -12 | -110 | -94 | -66 | -46 | -27 | -14 | -8 | -3 | 87 | 1 |
| 00E | 220 | 69 | -26 | -60 | -60 | -43 | -23 | -14 | -170 | -130 | -110 | -71 | -41 | -19 | -9 | -3 | 96 | 1 |
| 25W | 260 | 100 | -12 | -57 | -60 | -46 | -27 | -14 | -130 | -130 | -110 | -73 | -44 | -22 | -9 | -5 | 1 | 88 |
| 50W | 210 | 77 | -17 | -56 | -57 | -42 | -22 | -12 | -100 | -110 | -88 | -64 | -40 | -21 | -9 | -5 | 1 | 70 |
| 75W | 190 | 71 | -13 | -50 | -54 | -41 | -25 | -13 | -56 | -68 | -60 | -48 | -31 | -15 | -7 | -2 | 1 | 60 |

| STATION | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | GN | NF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100W | 170 | 60 | -17 | -51 | -54 | -41 | -26 | -16 | -96 | -110 | -93 | -68 | -46 | -23 | -10 | -5 | 1 | 54 |
| 125W | 150 | 54 | -16 | -48 | -50 | -39 | -23 | -13 | -96 | -110 | -94 | -72 | -48 | -24 | -10 | -3 | 1 | 48 |
| 150W | 150 | 55 | -10 | -40 | -43 | -35 | -21 | -13 | -89 | -105 | -91 | -71 | -46 | -23 | -11 | -5 | 1 | 44 |
| 175W | 140 | 50 | -11 | -88 | -43 | -34 | -21 | -12 | -61 | -76 | -70 | -57 | -38 | -19 | -10 | -5 | 1 | 39 |

Line 000N, Loop A centred at 375E:

| STATION | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | GN | NF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 250E | -25 | -9 | -4 | -3 | -1 | -1 | -1 | -1 | -105 | -43 | -15 | -7 | -7 | 0 | -1 | 0 | 2 | 1 |
| 225E | 18 | 8 | 1 | -3 | -3 | -2 | -1 | -1 | -140 | -69 | -26 | -11 | -3 | -1 | -1 | -1 | 4 | 1 |
| 200E | 84 | 39 | 10 | -2 | -3 | -3 | -2 | -2 | -140 | -76 | -30 | -13 | -4 | -2 | -1 | -1 | 7 | 1 |
| 175E | 160 | 70 | 20 | -1 | -5 | -5 | -3 | -2 | -130 | -74 | -31 | -13 | -6 | -2 | -1 | -1 | 11 | 1 |
| 150E | 180 | 77 | 18 | -6 | -9 | -8 | -4 | -3 | -130 | -80 | -35 | -17 | -7 | -3 | -2 | -1 | 16 | 1 |
| 125E | 180 | 75 | 15 | -9 | -12 | -9 | -4 | -3 | -150 | -93 | -44 | -20 | -9 | -3 | 0 | -1 | 20 | 1 |
| 100E | 190 | 78 | 10 | -14 | -17 | -13 | -6 | -5 | -190 | -120 | -62 | -29 | -13 | -5 | -1 | -2 | 31 | 1 |
| 75E | 210 | 83 | 4 | -23 | -25 | -18 | -9 | -7 | -160 | -110 | -60 | -32 | -16 | -7 | -2 | -3 | 45 | 1 |
| 50E | 200 | 65 | -11 | -34 | -33 | -24 | -12 | -8 | -170 | -120 | -69 | -37 | -18 | -9 | -2 | -2 | 62 | 1 |
| 25E | 200 | 54 | -26 | -50 | -47 | -33 | -17 | -10 | -260 | -180 | -110 | -61 | -31 | -12 | -5 | -3 | 77 | 1 |
| 00E | 240 | 78 | -19 | -53 | -52 | -38 | -21 | -12 | -270 | -190 | -120 | -73 | -38 | -17 | -8 | -3 | 88 | 1 |
| 25W | 240 | 81 | -24 | -61 | -60 | -44 | -24 | -14 | -180 | -140 | -110 | -69 | -39 | -18 | -7 | -5 | 99 | 1 |
| 50W | 230 | 74 | -26 | -62 | -65 | -45 | -26 | -15 | -210 | -170 | -120 | -80 | -47 | -21 | -9 | -4 | 1 | 85 |
| 75W | 200 | 63 | -24 | -59 | -58 | -43 | -24 | -14 | -170 | -140 | -110 | -73 | -41 | -20 | -8 | -4 | 1 | 72 |
| 100W | 170 | 53 | -24 | -56 | -56 | -42 | -24 | -11 | -120 | -110 | -83 | -58 | -35 | -17 | -7 | -3 | 1 | 61 |
| 125W | 150 | 50 | -23 | -54 | -54 | -41 | -24 | -14 | -170 | -150 | -120 | -80 | -48 | -24 | -11 | -5 | 1 | 56 |
| 150W | 130 | 40 | -22 | -50 | -52 | -39 | -25 | -13 | -105 | -110 | -89 | -63 | -39 | -19 | -8 | -2 | 1 | 47 |
| 175W | 105 | 40 | -17 | -43 | -48 | -37 | -22 | -13 | -110 | -120 | -98 | -72 | -46 | -23 | -10 | -4 | 1 | 38 |
| 200W | 110 | 51 | -6 | -37 | -42 | -34 | -21 | -13 | -84 | -96 | -83 | -62 | -40 | -21 | -8 | -4 | 1 | 34 |

Line 100N, Loop A centred at 375E:

| STATION | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | GN | NF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 250E | -99 | -44 | -17 | -7 | -3 | -2 | -1 | -1 | -61 | -27 | -12 | -6 | -2 | -1 | -1 | -1 | 2 | 1 |
| 225E | -140 | -77 | -29 | -12 | -5 | -3 | -2 | -1 | -140 | -68 | -25 | -12 | -3 | -1 | -2 | -1 | 4 | 1 |
| 200E | -140 | -87 | -34 | -16 | -7 | -4 | -3 | -2 | -290 | -120 | -53 | -20 | -6 | -2 | -2 | -1 | 7 | 1 |
| 175E | -49 | -46 | -22 | -14 | -9 | -6 | -4 | -2 | -420 | -200 | -84 | -31 | -9 | -3 | -2 | -1 | 10 | 1 |
| 150E | 91 | 26 | -2 | -11 | -11 | -9 | -5 | -3 | -420 | -220 | -93 | -35 | -12 | -4 | -2 | -1 | 18 | 1 |
| 125E | 210 | 91 | 18 | -11 | -14 | -12 | -7 | -4 | -370 | -200 | -94 | -39 | -14 | -6 | -3 | -1 | 28 | 1 |
| 100E | 260 | 130 | 22 | -14 | -19 | -15 | -8 | -5 | -300 | -180 | -89 | -40 | -16 | -7 | -3 | -1 | 39 | 1 |
| 75E | 270 | 100 | 7 | -23 | -26 | -18 | -11 | -7 | -270 | -170 | -84 | -40 | -18 | -8 | -3 | -1 | 50 | 1 |
| 50E | 240 | 85 | -5 | -34 | -33 | -24 | -12 | -8 | -310 | -190 | -110 | -54 | -23 | -10 | -4 | -1 | 64 | 1 |
| 25E | 240 | 73 | -17 | -45 | -43 | -30 | -15 | -10 | -280 | -180 | -110 | -58 | -27 | -12 | -5 | -1 | 77 | 1 |
| 00E | 240 | 74 | -25 | -56 | -54 | -37 | -20 | -12 | -320 | -210 | -120 | -72 | -36 | -16 | -8 | -3 | 89 | 1 |
| 25W | 250 | 64 | -38 | -68 | -63 | -44 | -23 | -13 | -230 | -170 | -120 | -68 | -37 | -15 | -6 | -2 | 1 | 99 |
| 50W | 240 | 58 | -41 | -68 | -62 | -42 | -22 | -12 | -270 | -210 | -130 | -80 | -43 | -18 | -8 | -2 | 1 | 88 |
| 75W | 200 | 49 | -38 | -63 | -59 | -41 | -23 | -12 | -150 | -130 | -98 | -61 | -34 | -13 | -6 | -2 | 1 | 70 |
| 100W | 170 | 28 | -46 | -67 | -60 | -42 | -24 | -13 | -180 | -150 | -120 | -74 | -40 | -18 | -10 | -2 | 1 | 59 |
| 125W | 180 | 33 | -40 | -64 | -57 | -40 | -24 | -12 | -120 | -120 | -95 | -62 | -35 | -14 | -10 | -3 | 1 | 52 |
| 150W | 170 | 38 | -30 | -55 | -53 | -38 | -23 | -12 | -130 | -120 | -110 | -71 | -39 | -16 | -10 | -4 | 1 | 46 |
| 175W | 150 | 34 | -30 | -54 | -51 | -37 | -23 | -12 | -120 | -130 | -110 | -74 | -42 | -20 | -10 | -3 | 1 | 40 |
| 200W | 140 | 38 | -23 | -49 | -48 | -37 | -22 | -12 | -130 | -130 | -120 | -81 | -47 | -21 | -11 | -4 | 1 | 35 |

Line 200N, Loop A centred at 375E:

| STATION | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | GN | NF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 225E | -400 | -230 | -90 | -34 | -13 | -7 | -3 | -2 | -230 | -110 | -46 | -19 | -6 | -2 | -2 | -1 | 10 | 1 |
| 200E | -370 | -290 | -110 | -41 | -16 | -8 | -4 | -3 | -560 | -350 | -120 | -39 | -11 | -4 | -2 | -1 | 13 | 1 |
| 175E | -330 | -240 | -99 | -41 | -18 | -10 | -5 | -3 | -770 | -390 | -130 | -51 | -15 | -5 | -2 | -1 | 18 | 1 |
| 150E | -110 | -105 | -55 | -34 | -21 | -13 | -7 | -4 | -840 | -460 | -170 | -68 | -21 | -7 | -3 | -2 | 28 | 1 |
| 125E | 140 | 43 | -9 | -26 | -23 | -17 | -9 | -5 | -810 | -470 | -180 | -77 | -27 | -9 | -3 | -2 | 43 | 1 |
| 100E | 300 | 140 | 21 | -23 | -28 | -21 | -11 | -9 | -630 | -380 | -160 | -74 | -27 | -10 | -4 | -1 | 59 | 1 |
| 75E | 320 | 150 | 21 | -24 | -36 | -28 | -16 | -9 | -460 | -290 | -130 | -68 | -28 | -11 | -3 | -1 | 70 | 1 |
| 50E | 320 | 150 | 6 | -38 | -41 | -31 | -18 | -10 | -340 | -220 | -120 | -61 | -27 | -12 | -7 | -1 | 79 | 1 |
| 25E | 250 | 89 | -18 | -54 | -52 | -38 | -21 | -11 | -380 | -260 | -130 | -78 | -34 | -14 | -8 | -2 | 89 | 1 |

| STATION | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | GN | NF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00E | 240 | 52 | -42 | -69 | -61 | -43 | -24 | -12 | -270 | -180 | -120 | -63 | -30 | -13 | -6 | -1 | 98 | 1 |
| 25W | 230 | 48 | -48 | -72 | -65 | -45 | -25 | -12 | -390 | -280 | -130 | -90 | -43 | -17 | -10 | -5 | 1 | 92 |
| 50W | 210 | 40 | -49 | -72 | -65 | -45 | -25 | -12 | -330 | -230 | -120 | -77 | -35 | -13 | -8 | -4 | 1 | 80 |
| 75W | 180 | 28 | -49 | -72 | -64 | -44 | -28 | -14 | -280 | -230 | -130 | -88 | -44 | -18 | -11 | -5 | 1 | 67 |
| 100W | 180 | 39 | -43 | -68 | -61 | -43 | -26 | -12 | -220 | -180 | -120 | -79 | -41 | -17 | -7 | -2 | 1 | 60 |
| 125W | 160 | 40 | -35 | -62 | -58 | -40 | -24 | -12 | -180 | -160 | -120 | -74 | -40 | -18 | -9 | -4 | 1 | 51 |
| 150W | 170 | 36 | -36 | -62 | -57 | -40 | -22 | -12 | -160 | -140 | -120 | -74 | -40 | -18 | -10 | -3 | 1 | 48 |
| 175W | 160 | 34 | -38 | -61 | -57 | -40 | -23 | -12 | -140 | -130 | -120 | -76 | -41 | -17 | -10 | -4 | 1 | 42 |
| 200W | 140 | 29 | -40 | -63 | -57 | -40 | -23 | -12 | -120 | -130 | -120 | -76 | -24 | -21 | -11 | -3 | 1 | 37 |

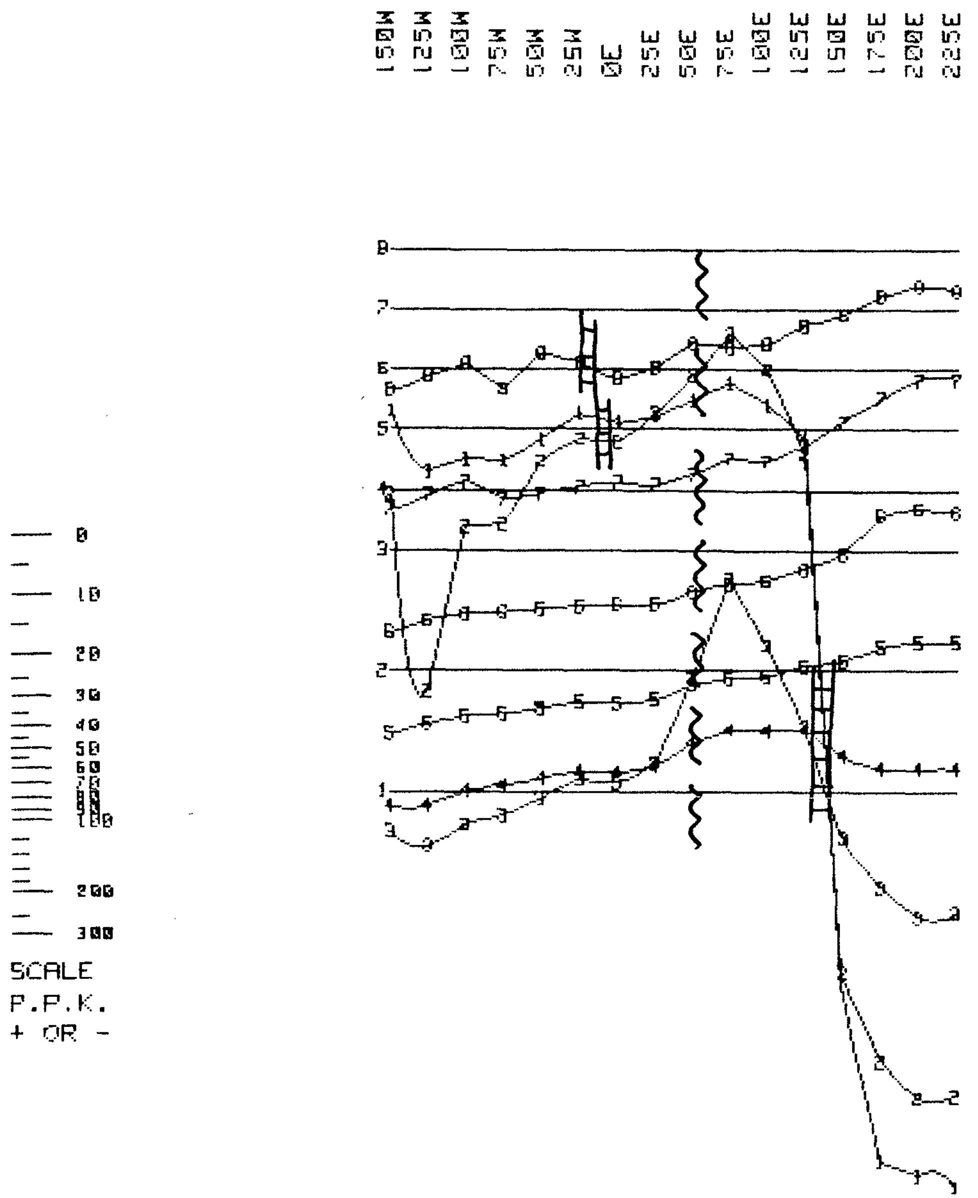
Line 300N, Loop A centred at 375E:

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 225E | -390 | -390 | -170 | -74 | -33 | -15 | -6 | -5 | -700 | -360 | -130 | -50 | -17 | -5 | 0 | -1 | 29 | 1 |
| 200E | -380 | -400 | -170 | -78 | -36 | -18 | -8 | -5 | -760 | -440 | -170 | -67 | -22 | -7 | -2 | -3 | 34 | 1 |
| 175E | -310 | -290 | -140 | -72 | -38 | -21 | -9 | -6 | -980 | -590 | -210 | -90 | -30 | -8 | 0 | -2 | 46 | 1 |
| 150E | -87 | -110 | -94 | -64 | -43 | -26 | -12 | -9 | -999 | -740 | -310 | -120 | -42 | -13 | -4 | -3 | 61 | 1 |
| 125E | 200 | 54 | -26 | -49 | -48 | -33 | -16 | -10 | -999 | -650 | -300 | -120 | -50 | -17 | -4 | -4 | 81 | 1 |
| 100E | 280 | 130 | -6 | -50 | -54 | -39 | -19 | -14 | -850 | -550 | -260 | -120 | -49 | -19 | -6 | -3 | 91 | 1 |
| 75E | 330 | 150 | -3 | -56 | -61 | -46 | -24 | -15 | -660 | -440 | -210 | -110 | -48 | -19 | -5 | -3 | 99 | 1 |
| 50E | 330 | 140 | -13 | -62 | -64 | -47 | -25 | -14 | -590 | -400 | -190 | -105 | -46 | -17 | -6 | -4 | 1 | 99 |
| 25E | 300 | 140 | -19 | -65 | -66 | -47 | -24 | -12 | -480 | -340 | -170 | -94 | -44 | -17 | -6 | -3 | 1 | 91 |
| 00E | 260 | 69 | -41 | -74 | -68 | -45 | -21 | -12 | -440 | -320 | -160 | -93 | -43 | -17 | -6 | -3 | 1 | 86 |
| 25W | 210 | 44 | -47 | -74 | -67 | -47 | -27 | -13 | -380 | -280 | -140 | -87 | -39 | -14 | -7 | -3 | 1 | 76 |
| 50W | 190 | 40 | -47 | -71 | -64 | -43 | -22 | -12 | -290 | -230 | -120 | -84 | -41 | -15 | -6 | -2 | 1 | 66 |
| 75W | 180 | 40 | -41 | -67 | -62 | -42 | -24 | -13 | -270 | -210 | -120 | -80 | -39 | -16 | -7 | -3 | 1 | 57 |
| 100W | 160 | 36 | -42 | -67 | -61 | -41 | -23 | -13 | -180 | -130 | -110 | -67 | -34 | -13 | -5 | -4 | 1 | 51 |

Line 400N, Loop A centred at 375E:

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 225E | -370 | -490 | -270 | -120 | -63 | -32 | -15 | -9 | -460 | -350 | -170 | -76 | -28 | -9 | -2 | 0 | 62 | 1 |
| 200E | -330 | -500 | -280 | -120 | -63 | -31 | -15 | -8 | -600 | -530 | -250 | -105 | -36 | -11 | -4 | -1 | 64 | 1 |
| 175E | -290 | -350 | -210 | -120 | -66 | -33 | -19 | -10 | -780 | -640 | -300 | -120 | -43 | -12 | -6 | -2 | 77 | 1 |
| 150E | -52 | -150 | -130 | -105 | -76 | -48 | -24 | -14 | -999 | -850 | -420 | -170 | -65 | -20 | -7 | -3 | 95 | 1 |
| 125E | 210 | 57 | -38 | -70 | -68 | -48 | -26 | -14 | -990 | -760 | -380 | -160 | -66 | -23 | -4 | -3 | 1 | 86 |
| 100E | 250 | 110 | -15 | -61 | -65 | -46 | -26 | -15 | -740 | -570 | -290 | -130 | -58 | -21 | -7 | -4 | 1 | 74 |
| 75E | 280 | 140 | -4 | -55 | -60 | -43 | -23 | -14 | -550 | -410 | -220 | -115 | -51 | -19 | -8 | -4 | 1 | 67 |
| 50E | 230 | 91 | -18 | -60 | -62 | -45 | -26 | -13 | -470 | -350 | -180 | -100 | -46 | -19 | -6 | -2 | 1 | 65 |
| 25E | 190 | 61 | -40 | -73 | -69 | -49 | -28 | -16 | -400 | -320 | -180 | -89 | -41 | -18 | -7 | -5 | 1 | 63 |
| 00E | 170 | 44 | -46 | -74 | -68 | -47 | -26 | -17 | -390 | -320 | -180 | -95 | -44 | -18 | -4 | 1 | 1 | 60 |
| 25W | 180 | 44 | -43 | -71 | -65 | -46 | -26 | -14 | -340 | -280 | -150 | -91 | -42 | -17 | -5 | -1 | 1 | 58 |
| 50W | 130 | 33 | -48 | -71 | -64 | -44 | -26 | -12 | -270 | -230 | -120 | -81 | -39 | -15 | -7 | -2 | 1 | 54 |
| 75W | 100 | 17 | -53 | -71 | -64 | -43 | -26 | -16 | -230 | -190 | -120 | -72 | -36 | -14 | -6 | -3 | 1 | 51 |
| 100W | 98 | 16 | -56 | -73 | -63 | -42 | -21 | -12 | -200 | -180 | -120 | -74 | -36 | -14 | -7 | -3 | 1 | 49 |
| 125W | 83 | -2 | -66 | -80 | -65 | -43 | -23 | -13 | -190 | -180 | -120 | -79 | -40 | -15 | -5 | -1 | 1 | 47 |
| 150W | 130 | 18 | -50 | -70 | -62 | -42 | -23 | -13 | -180 | -180 | -120 | -85 | -44 | -18 | -8 | -4 | 1 | 41 |

A total of 141 stations were occupied.




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

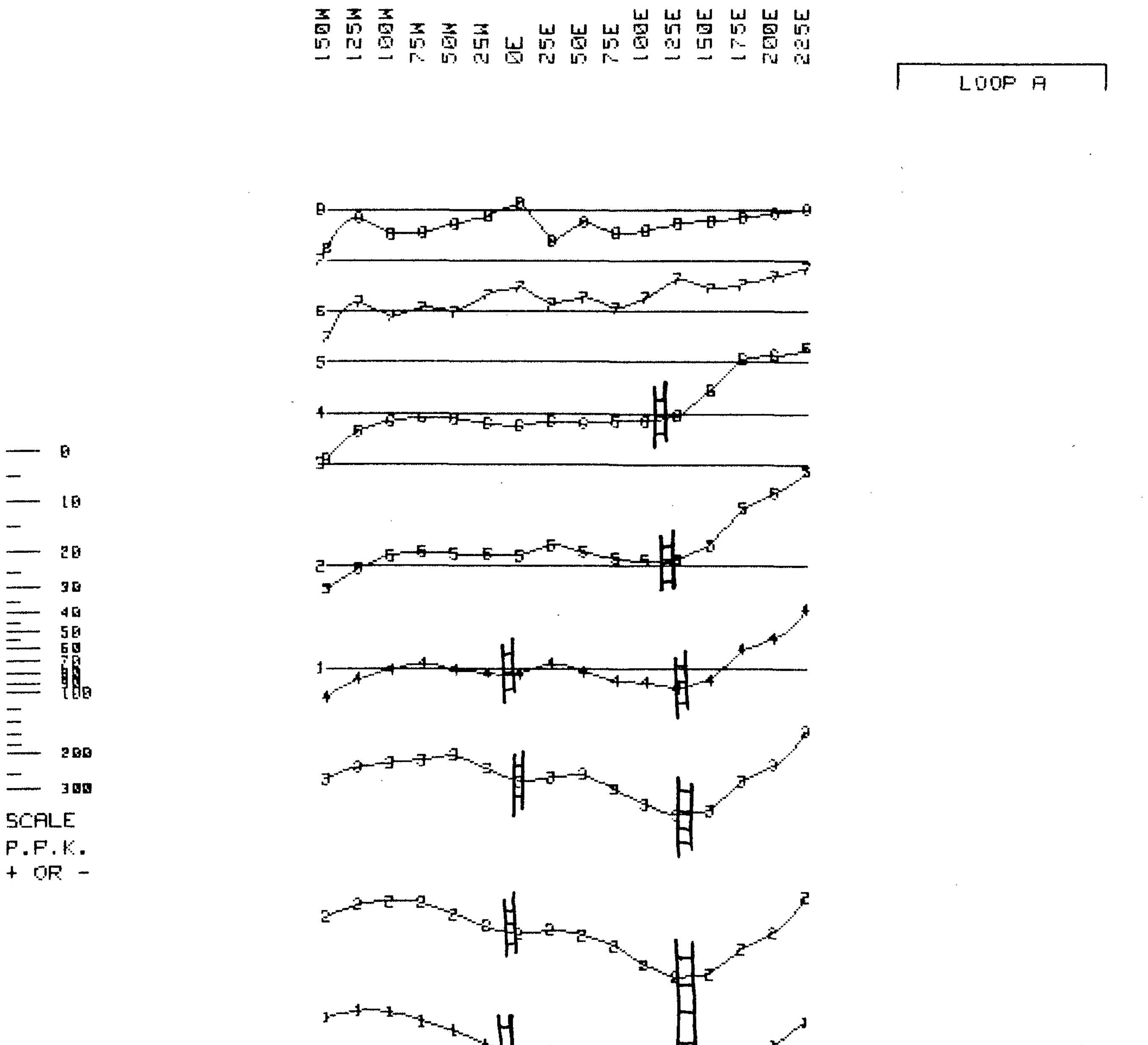
PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
400N A

DATE: MAR/81

FIG.: 4



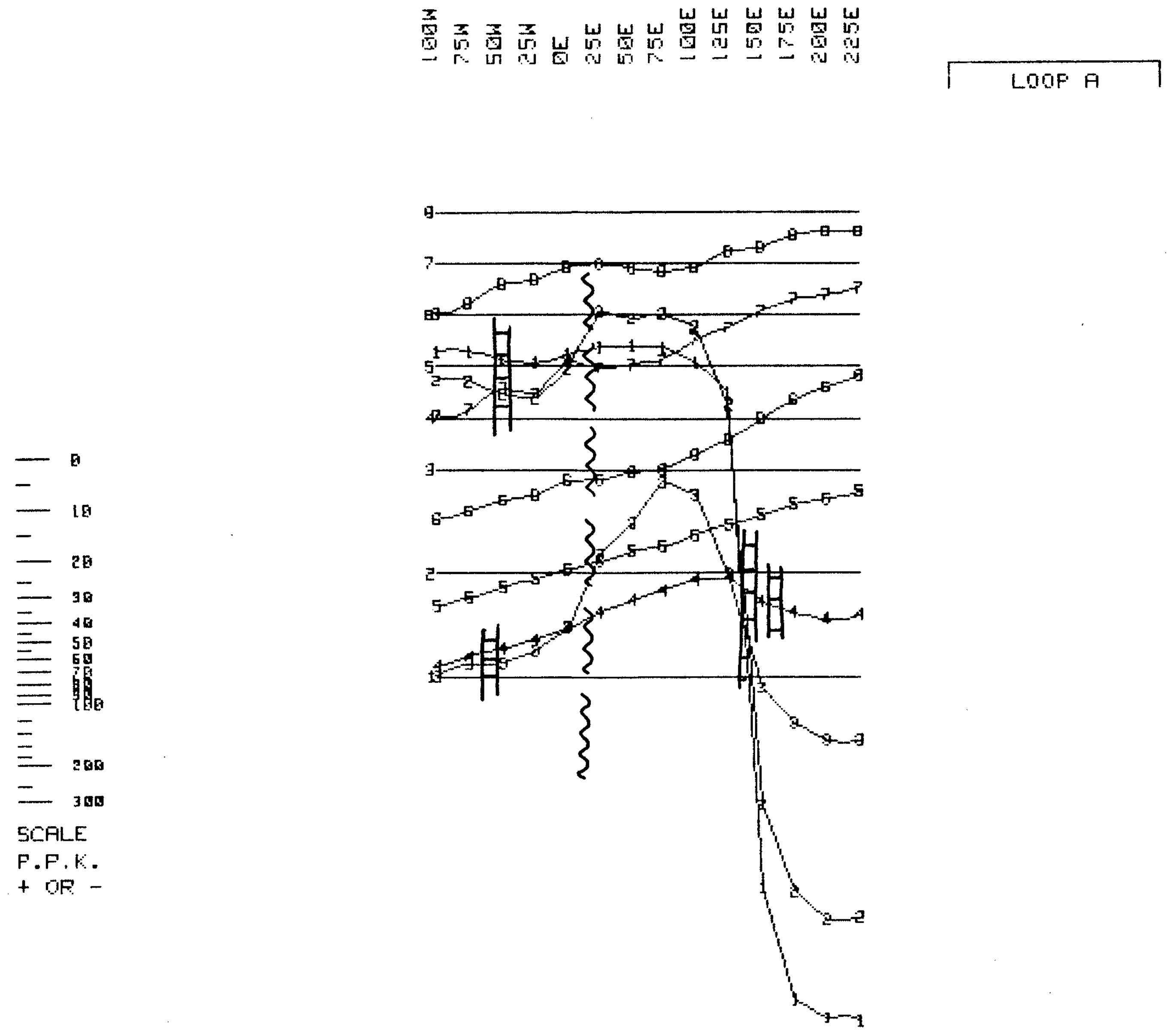

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
400N A

| | |
|---|---|
| DATE: MAR/81 | FIG.: 5 |




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

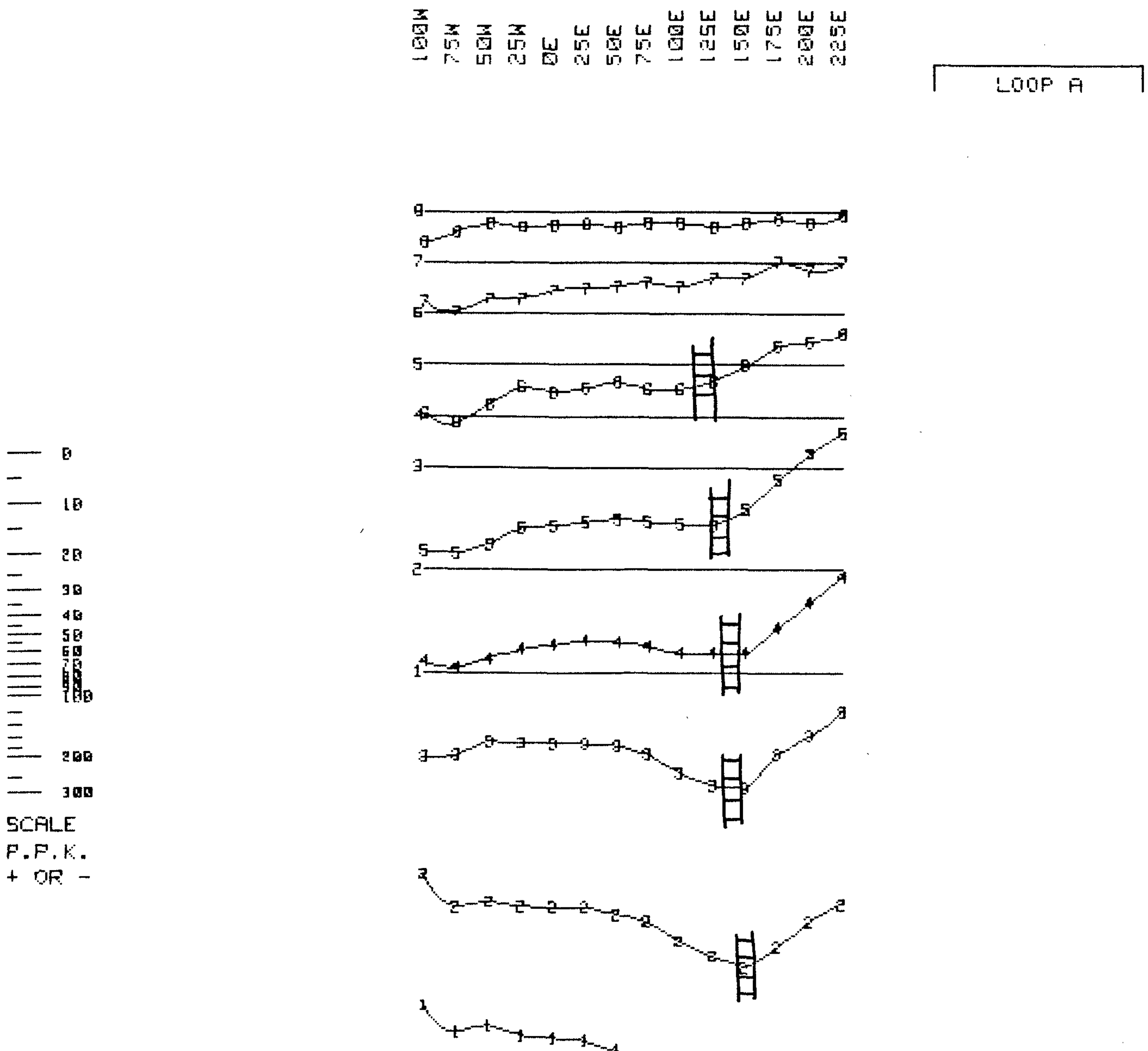
PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES

0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
300N A

| | |
|---|---|
| DATE: MAR/81 | FIG.: 6 |




PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

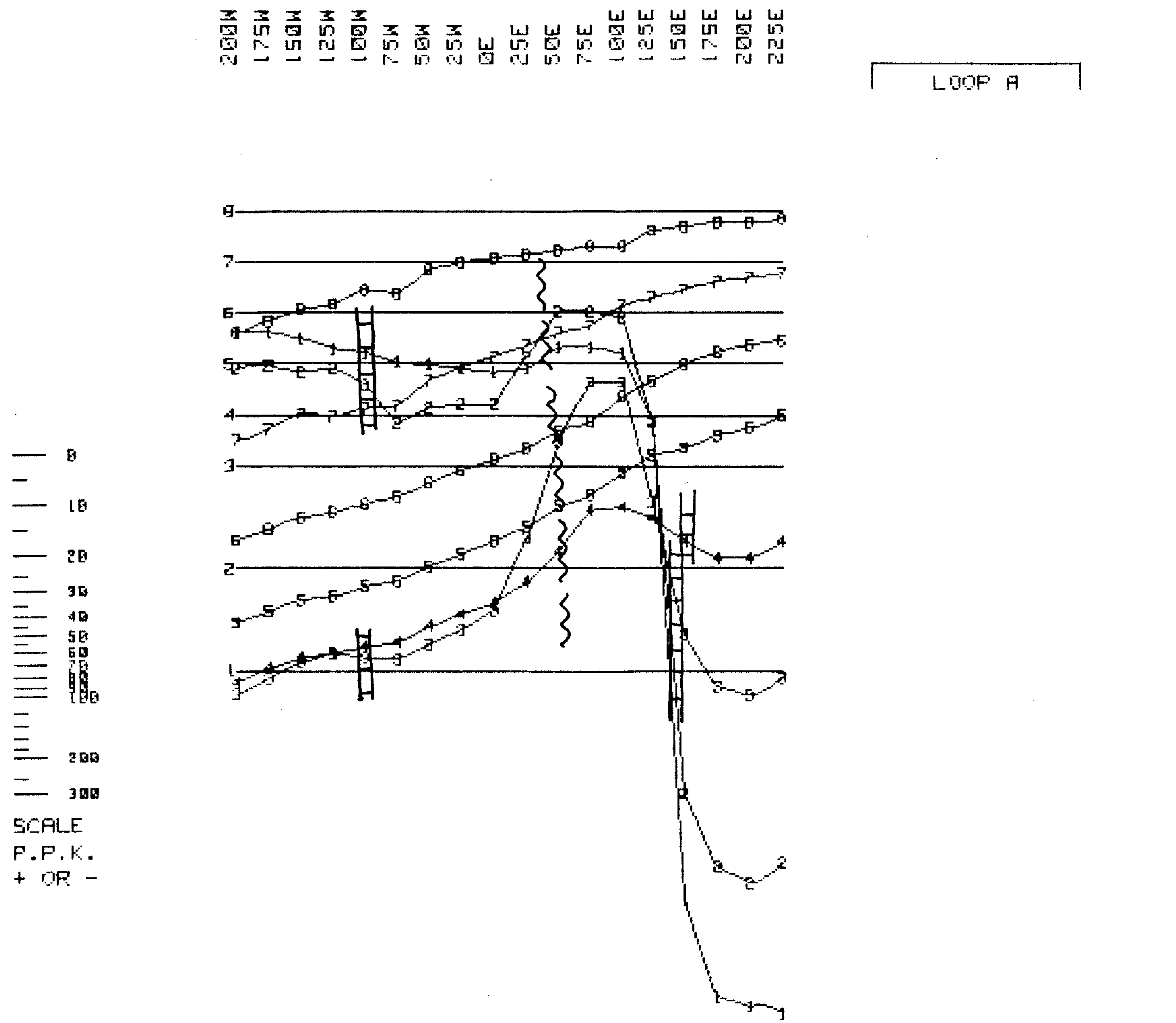
METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
300N A

DATE: MAR/81

FIG.: 7




GLEN E. WHITE
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& SERVICES LTD.

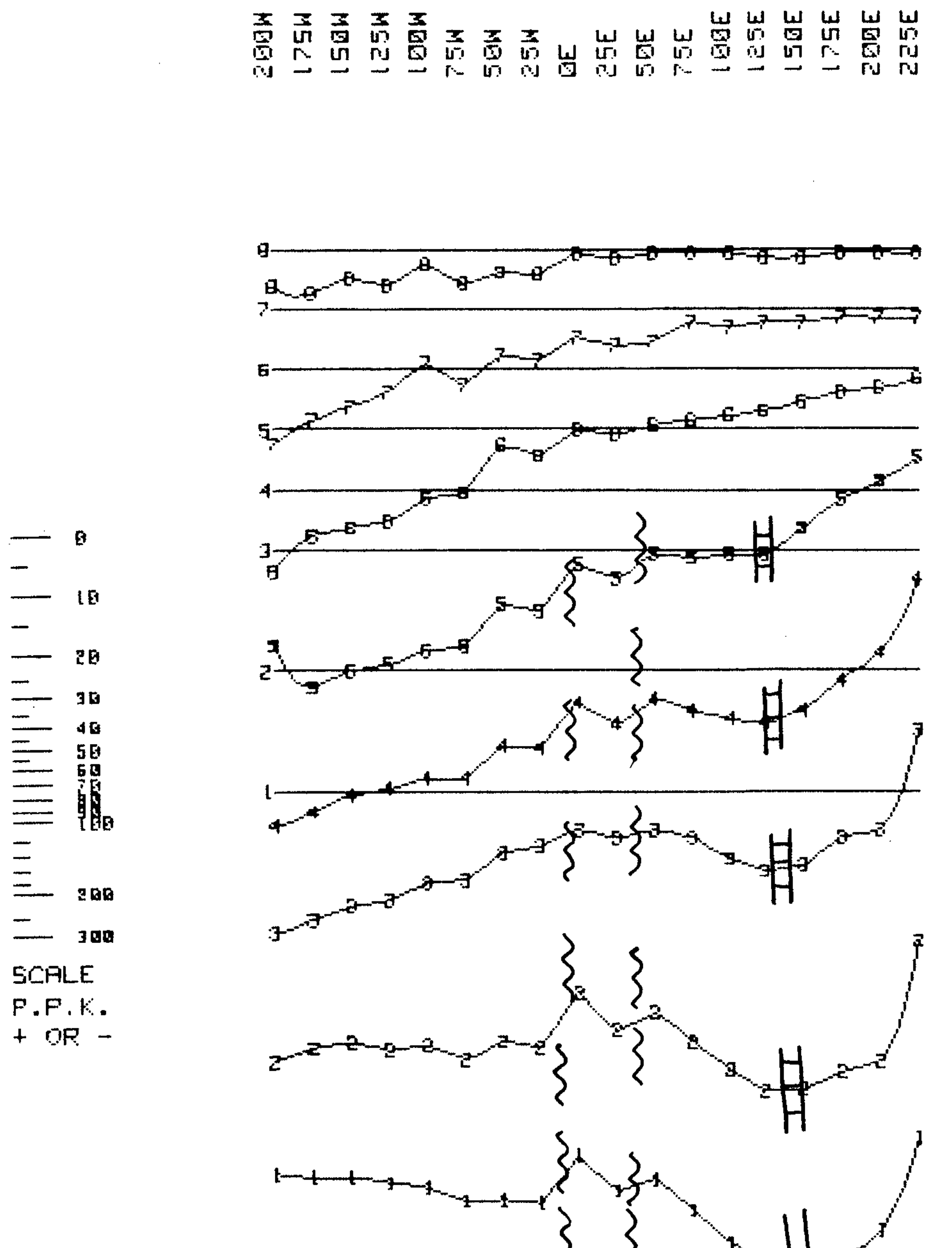
PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
200N A

DATE: MAR/81

FIG.: 8




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

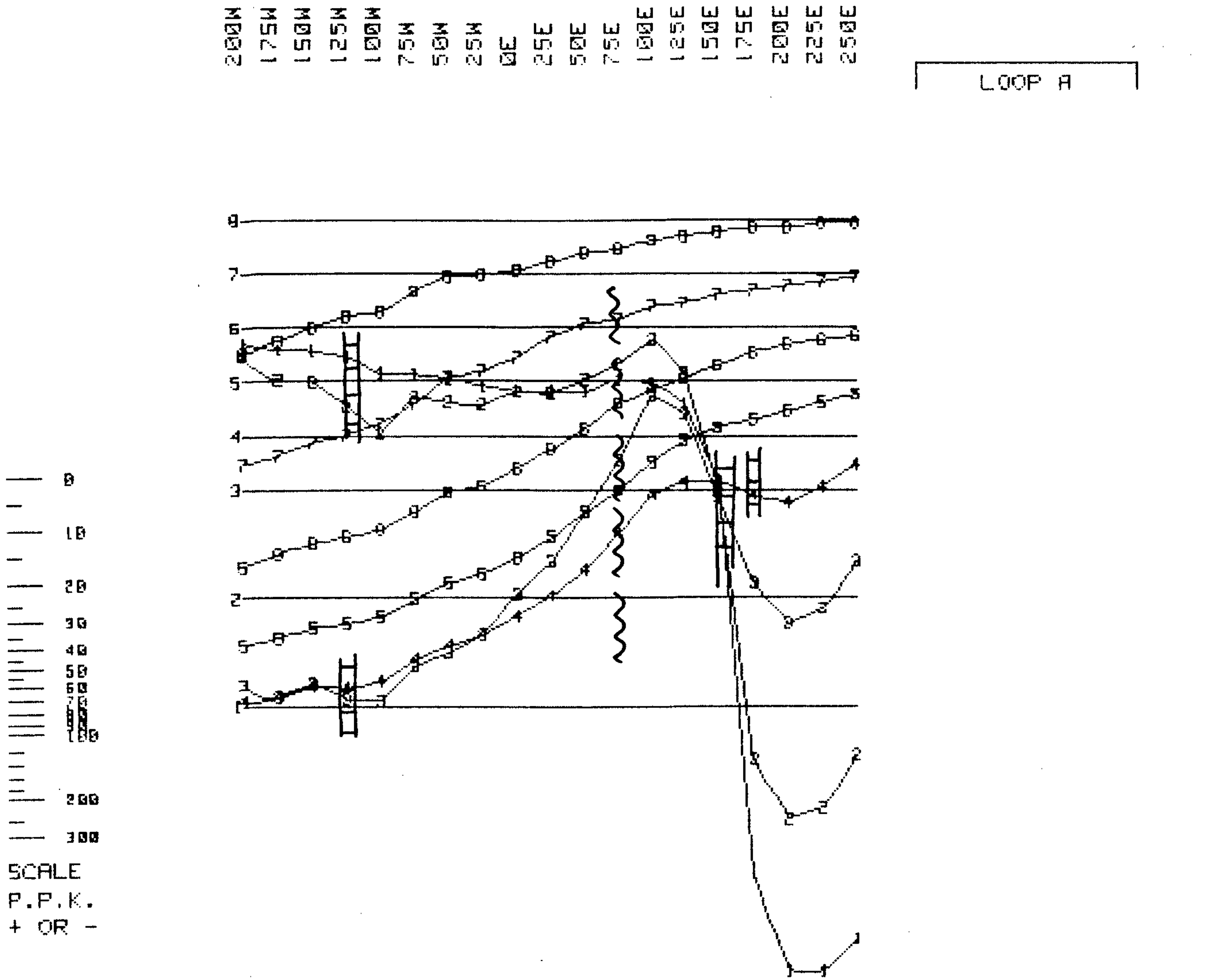
PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
200N A

DATE: MAR/81

FIG.: 9

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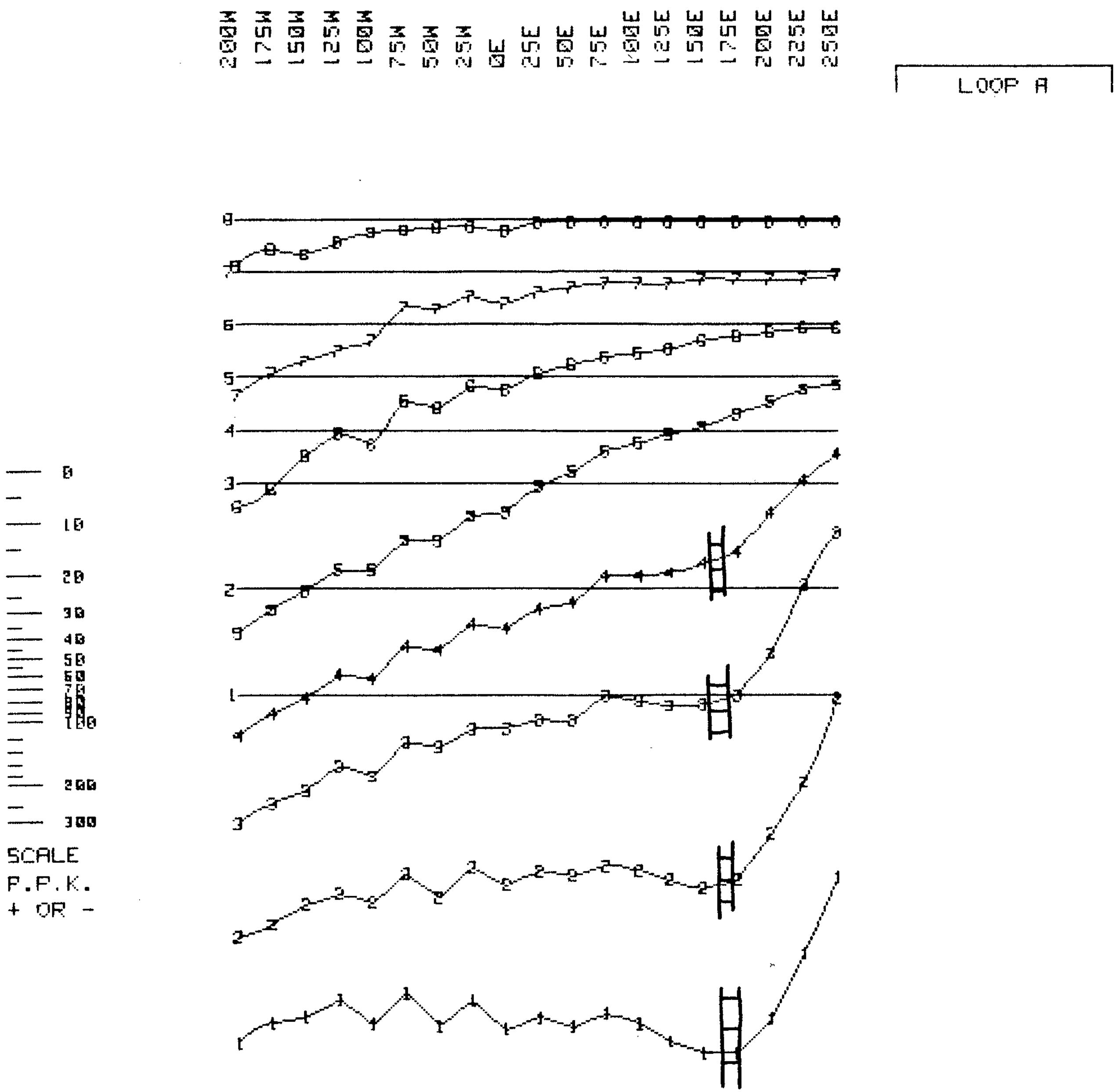
GEOPHYSICAL CONSULTING
& SERVICES LTD.

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
100N A

DATE: MAR/81 | FIG.: 10




PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES

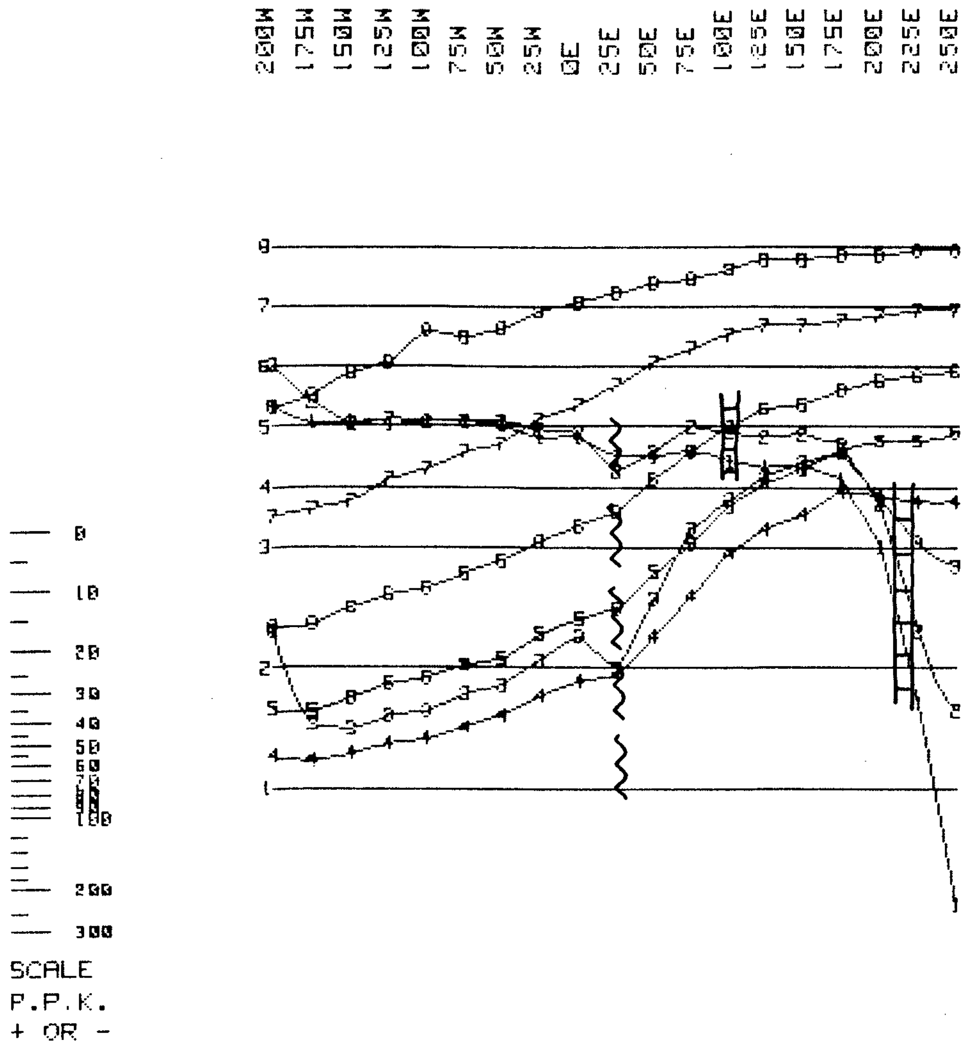
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
100N A

DATE: MAR/81

FIG.: 11




LOOP A

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
000N A

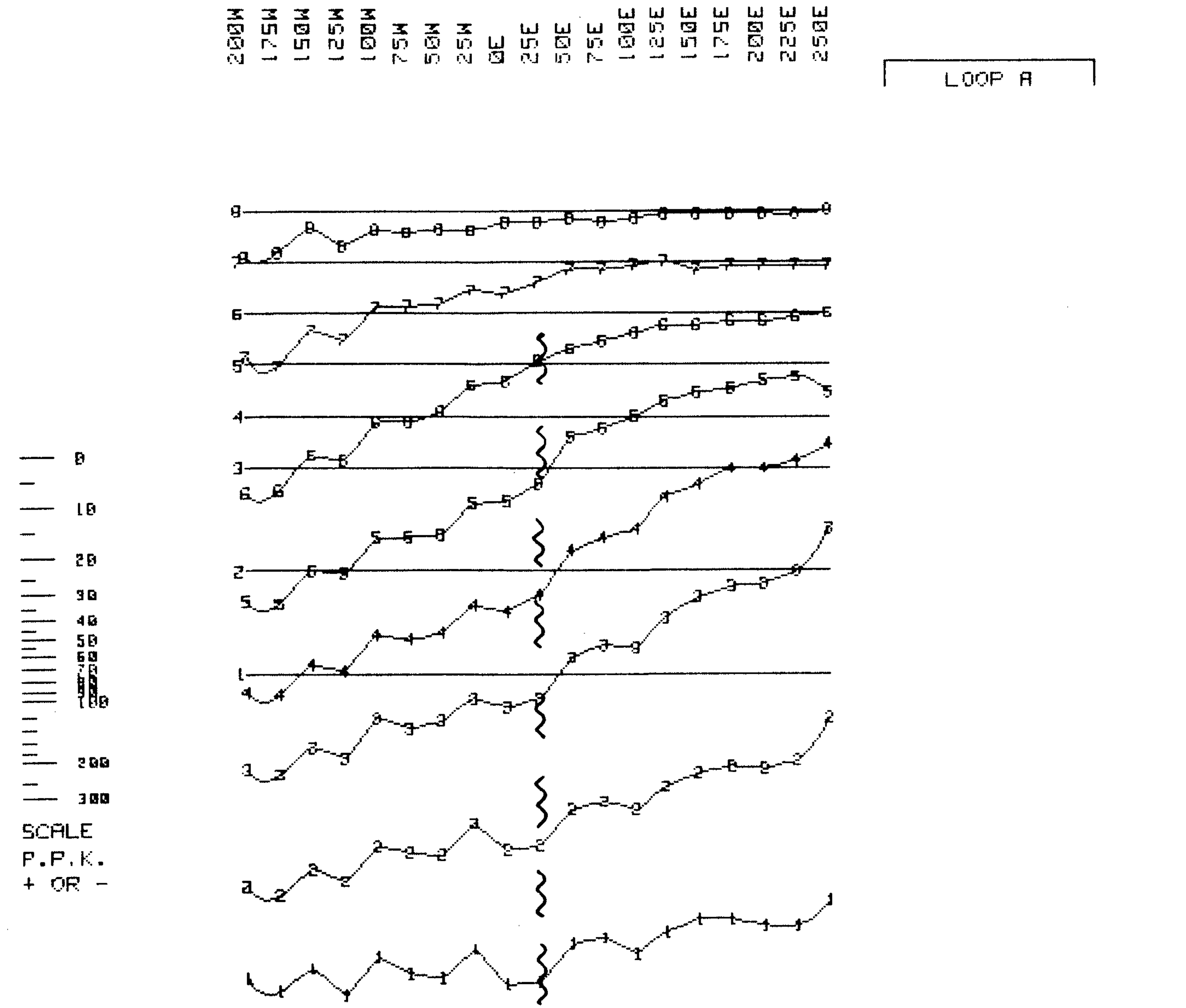
PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

DATE: MAR/81

FIG.: 12



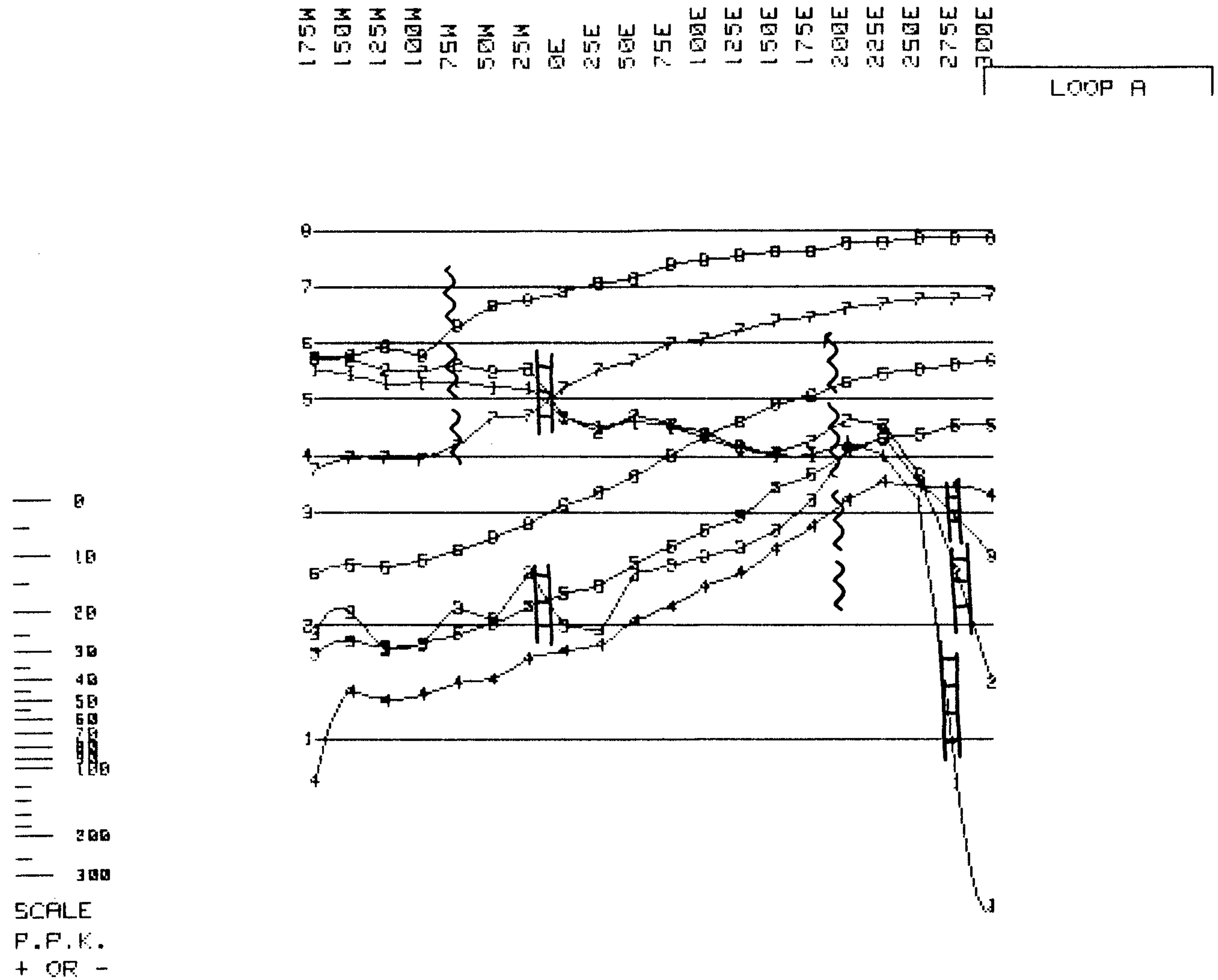

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
000N A

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

DATE: MAR/81

FIG.: 13




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

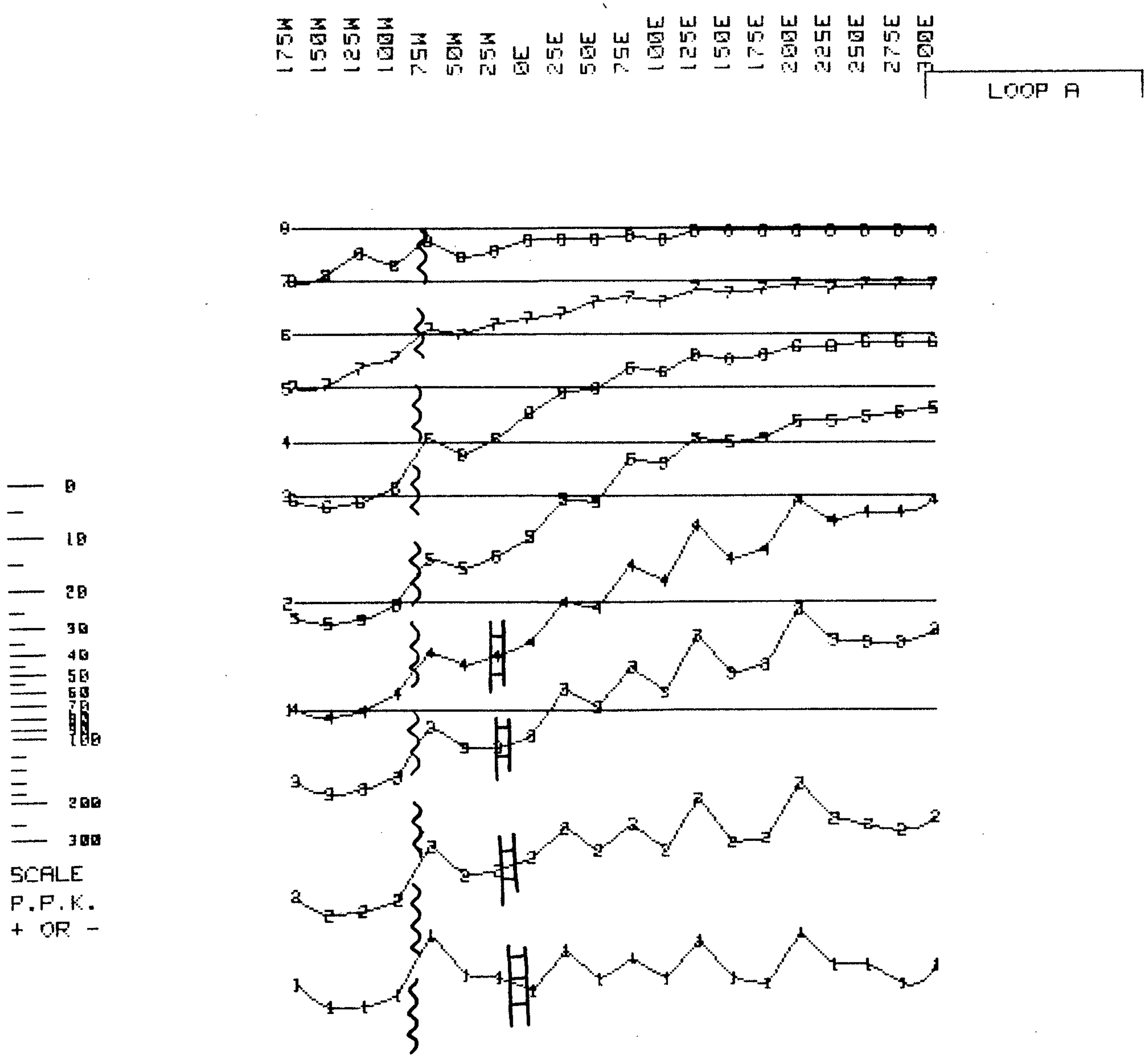
PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
100S A

DATE: MAR/81

FIG.: 14




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

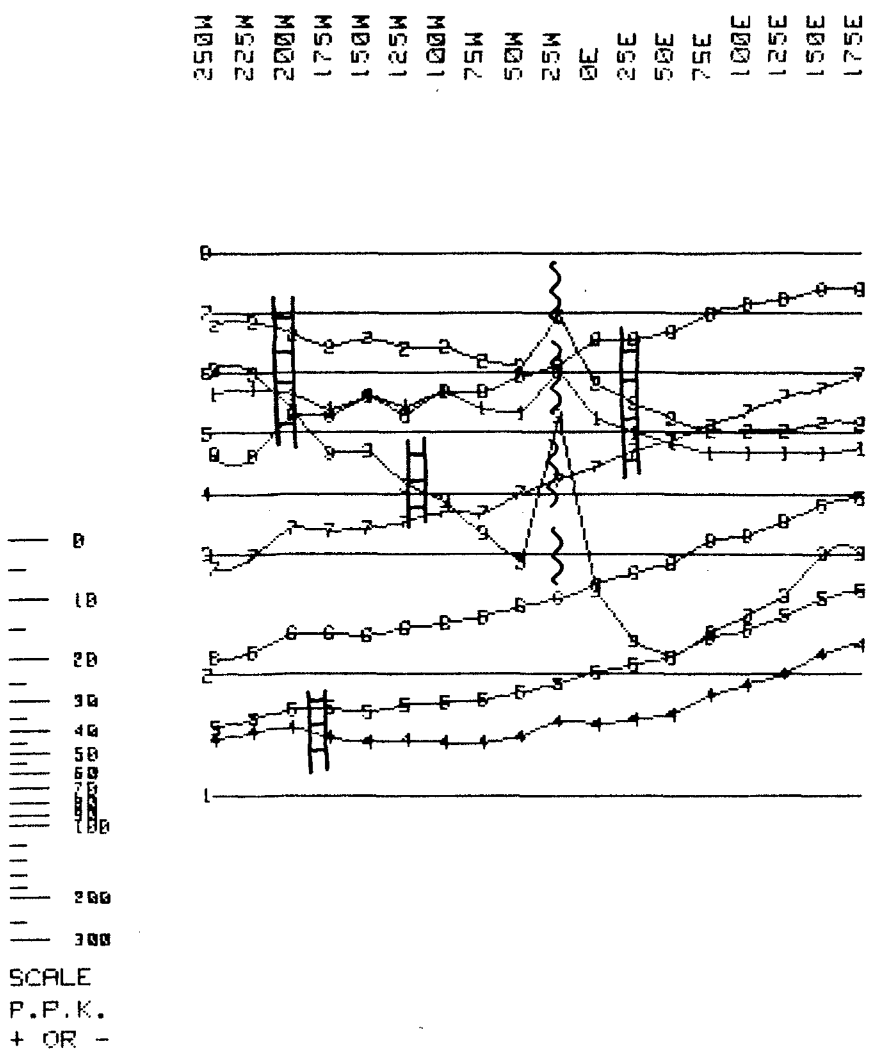
METRES

0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
100S A

DATE: MAR/81

FIG.:15




NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
2005 A

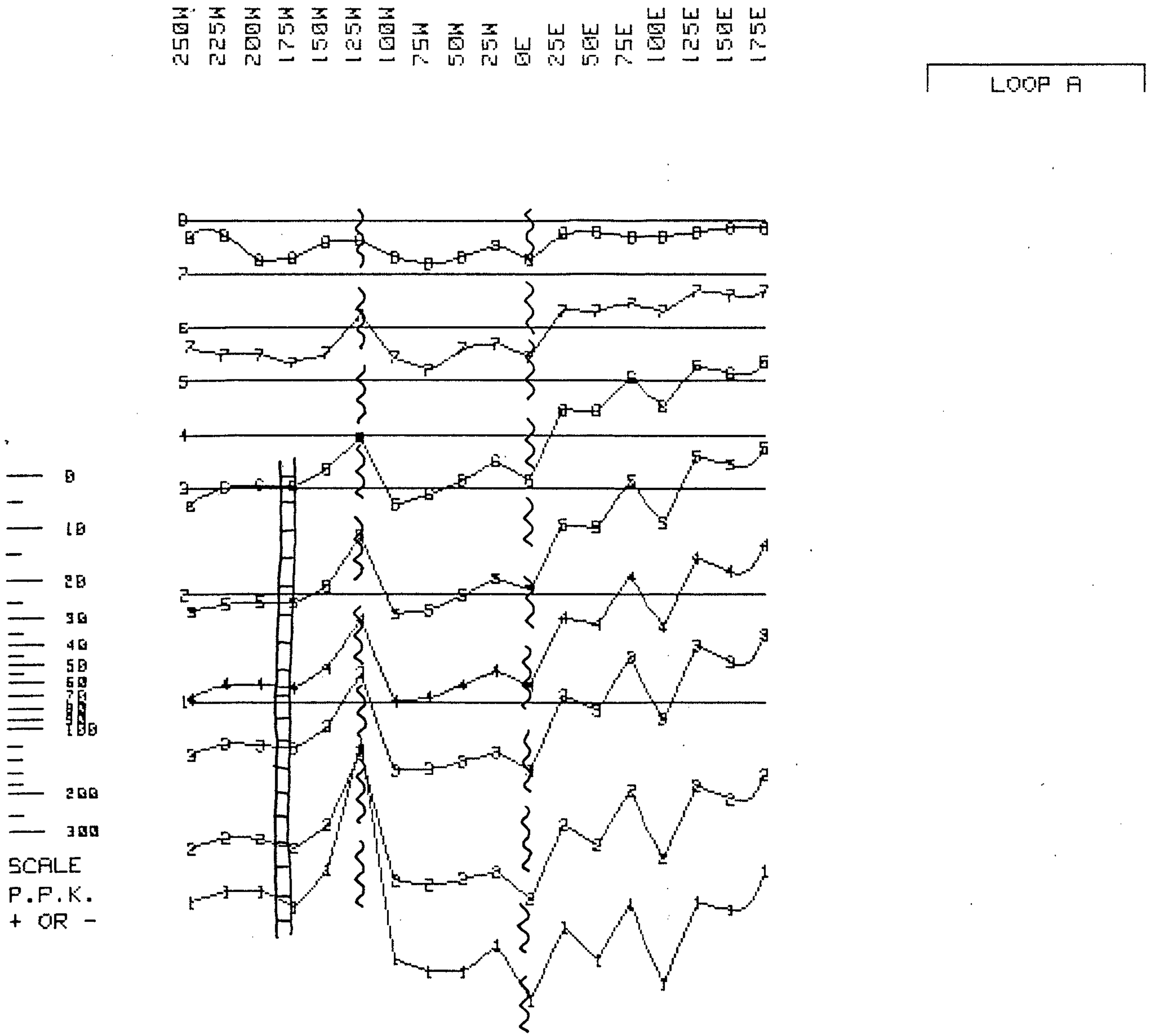
GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

DATE: MAR/81

FIG.: 16




GLEN E. WHITE
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& SERVICES LTD.

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

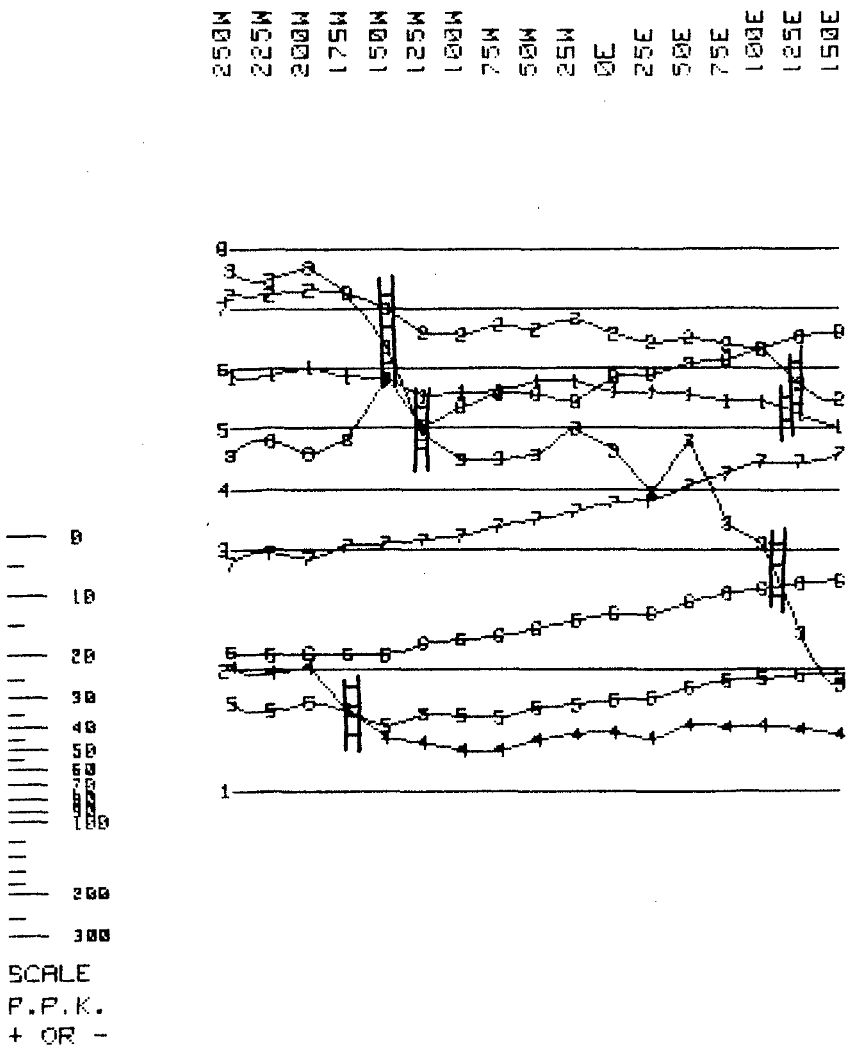
METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
2005 A

DATE: MAR/81

FIG.: 17

LOOP A




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

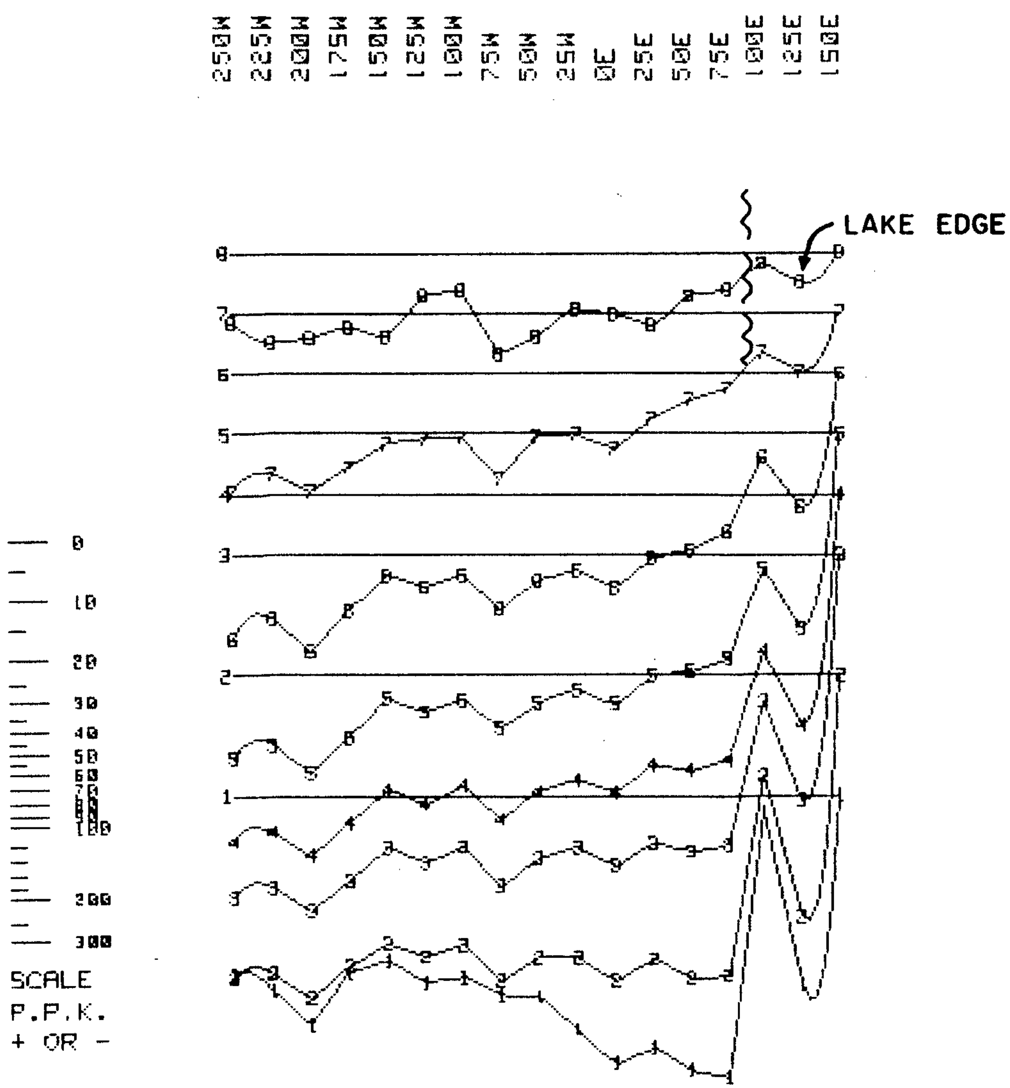
METRES

0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
3005 A

DATE: MAR/81

FIG.: 18




PRIMARY FIELD NORMALISED DATA
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

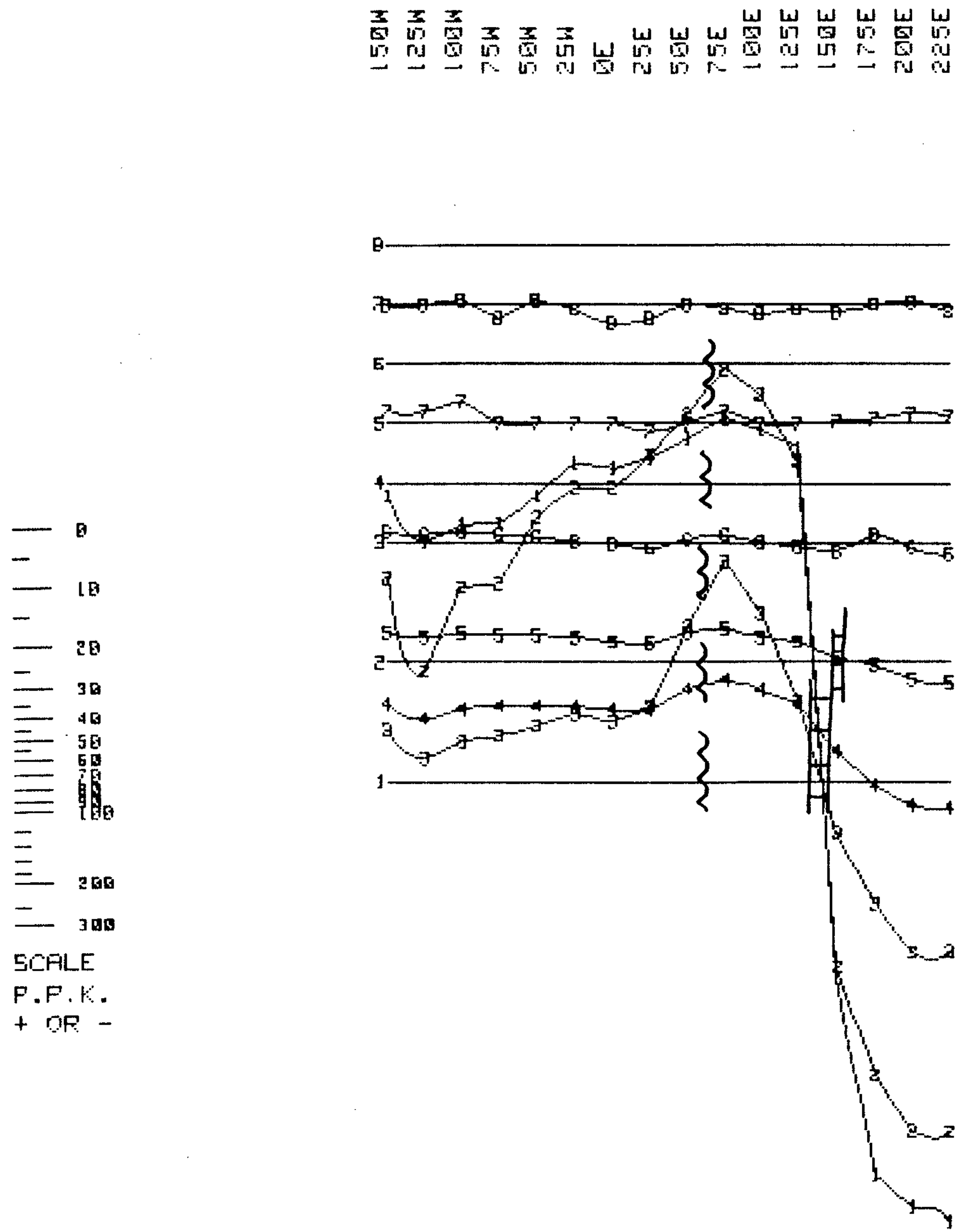
METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
300S A

DATE: MAR/81

FIG.: 19




CONSTANT GAIN DATA, G-(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
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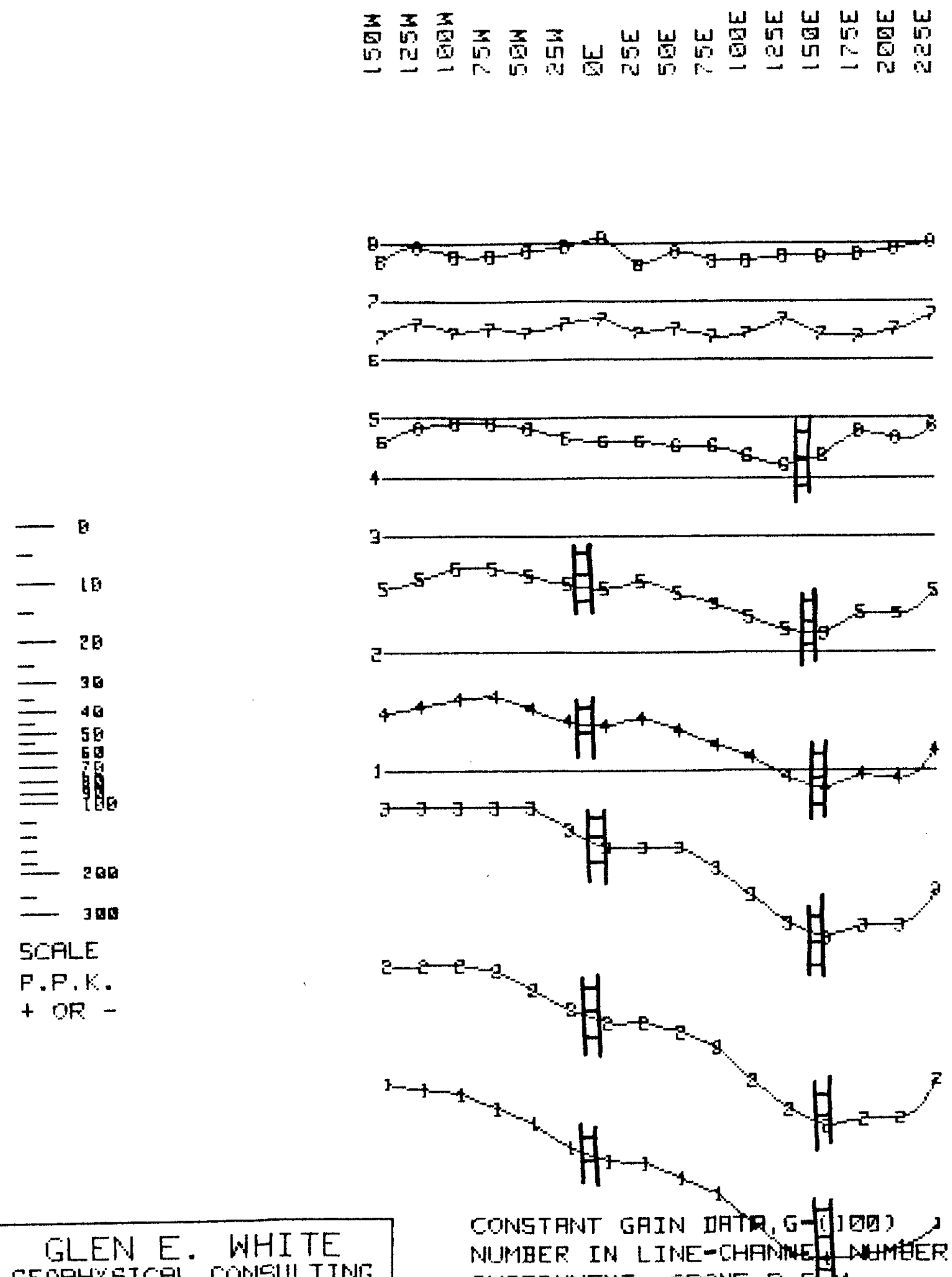
NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
400N A

DATE: MAR/81 | FIG.: 20




LOOP A

CONSTANT GAIN DATA,G=(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

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GEOPHYSICAL CONSULTING
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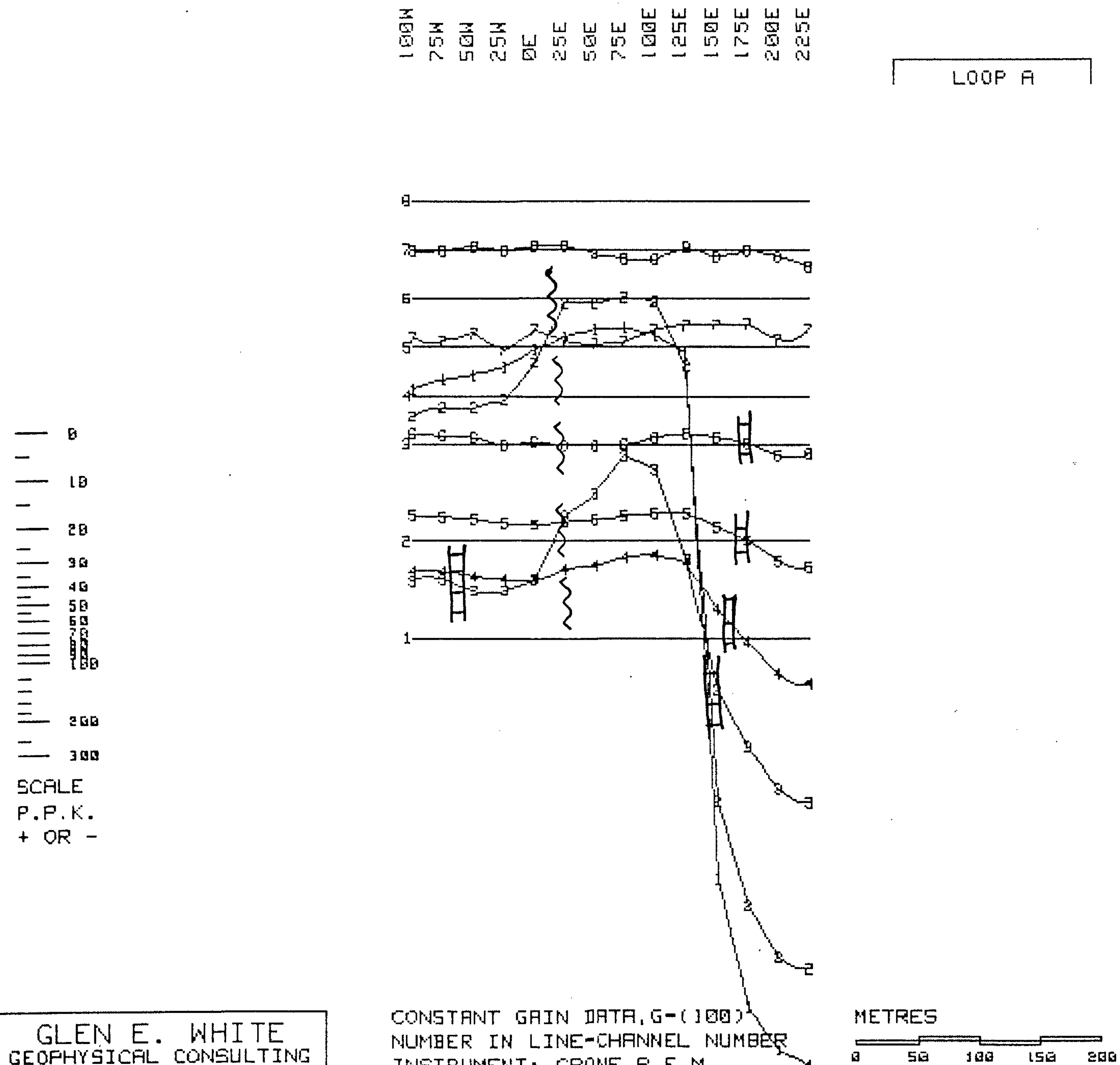
NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
400N A

DATE: MAR/81
FIG.: 21




CONSTANT GAIN DATA, G-(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

GLEN E. WHITE
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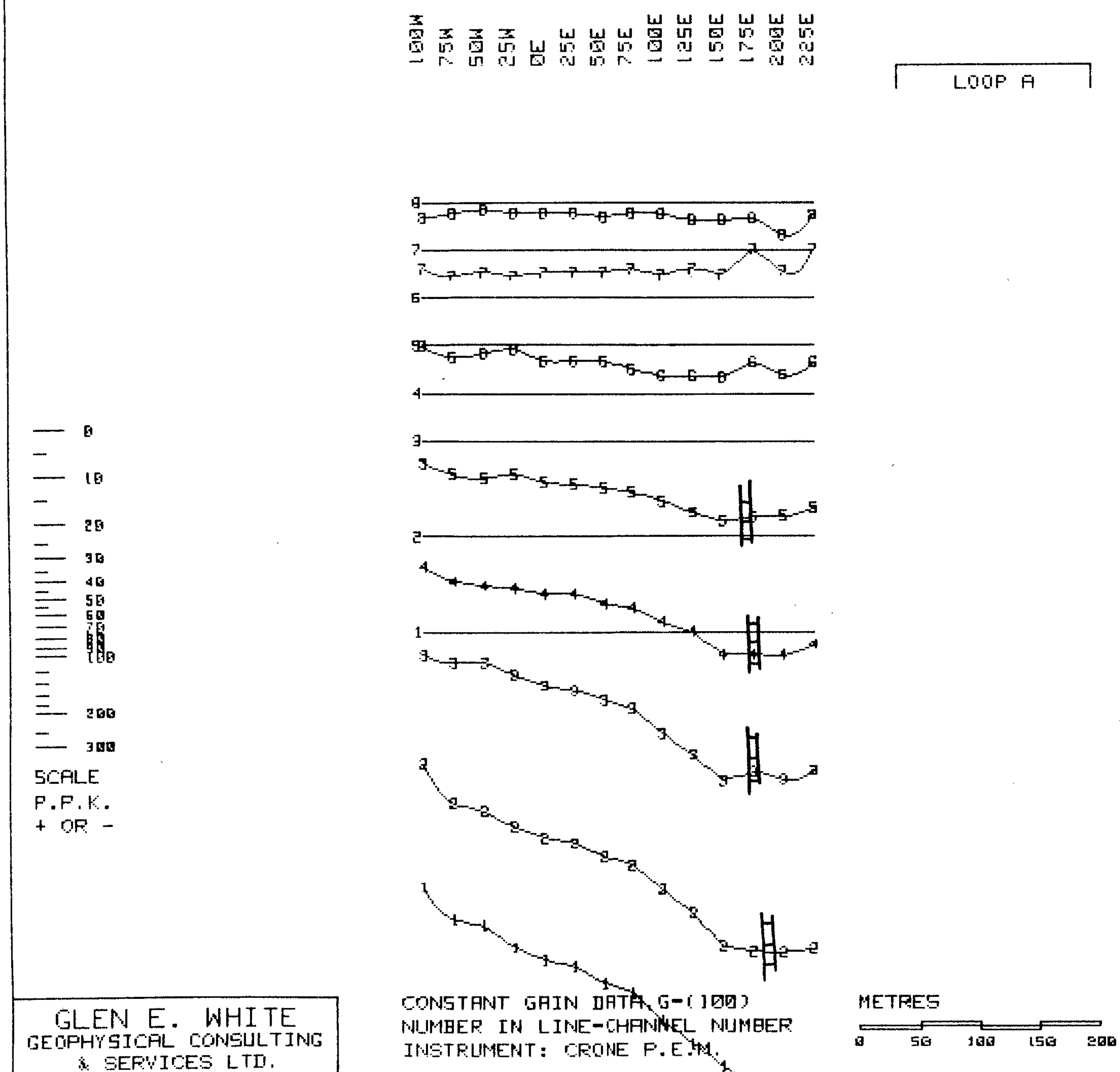
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
300N A

DATE: MAR/81

FIG.: 22




CONSTANT GAIN DATA G=(100)
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

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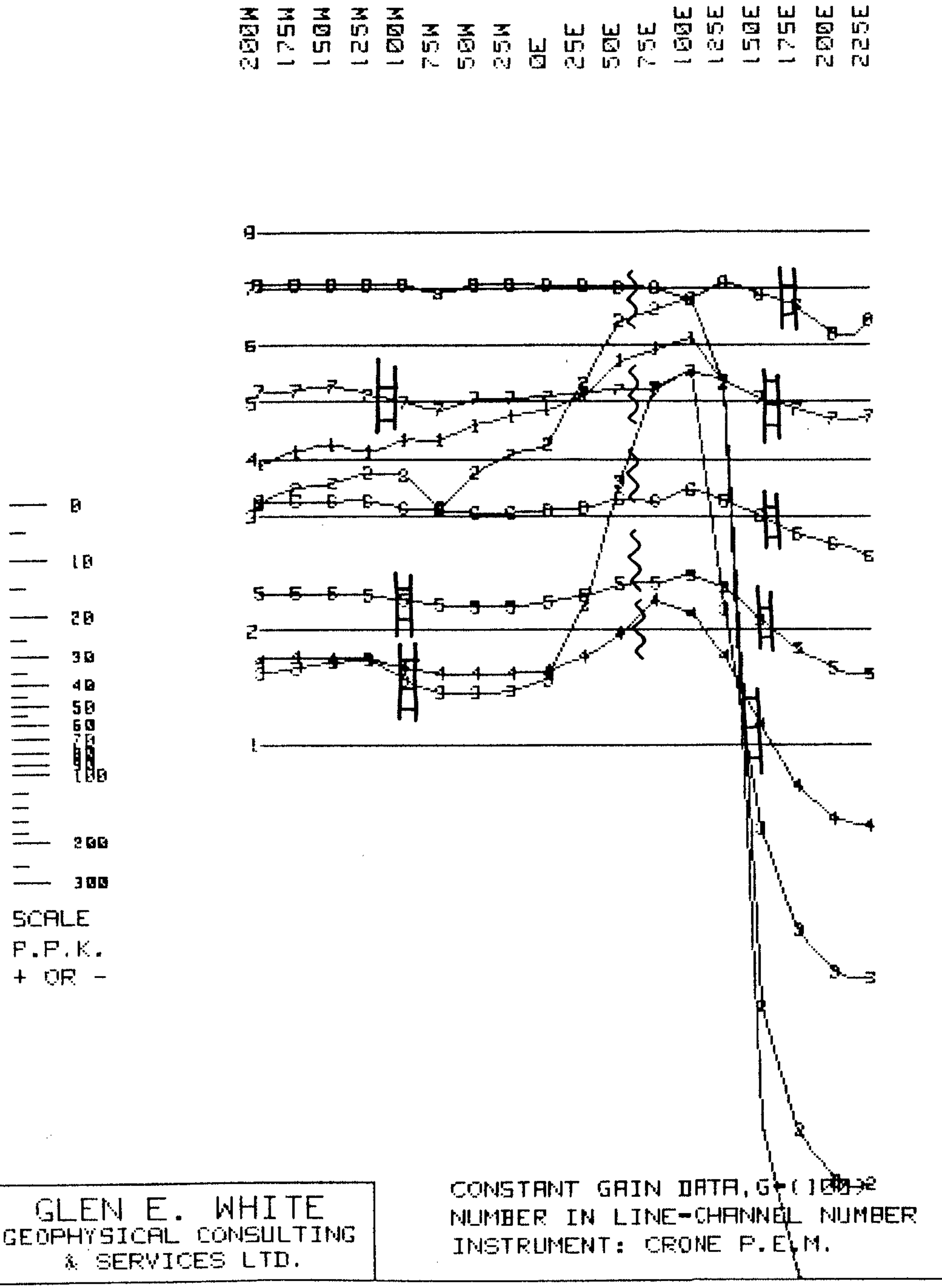
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
300N A

DATE: MAR/81 | FIG.: 23




CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES 0 50 100 150 200

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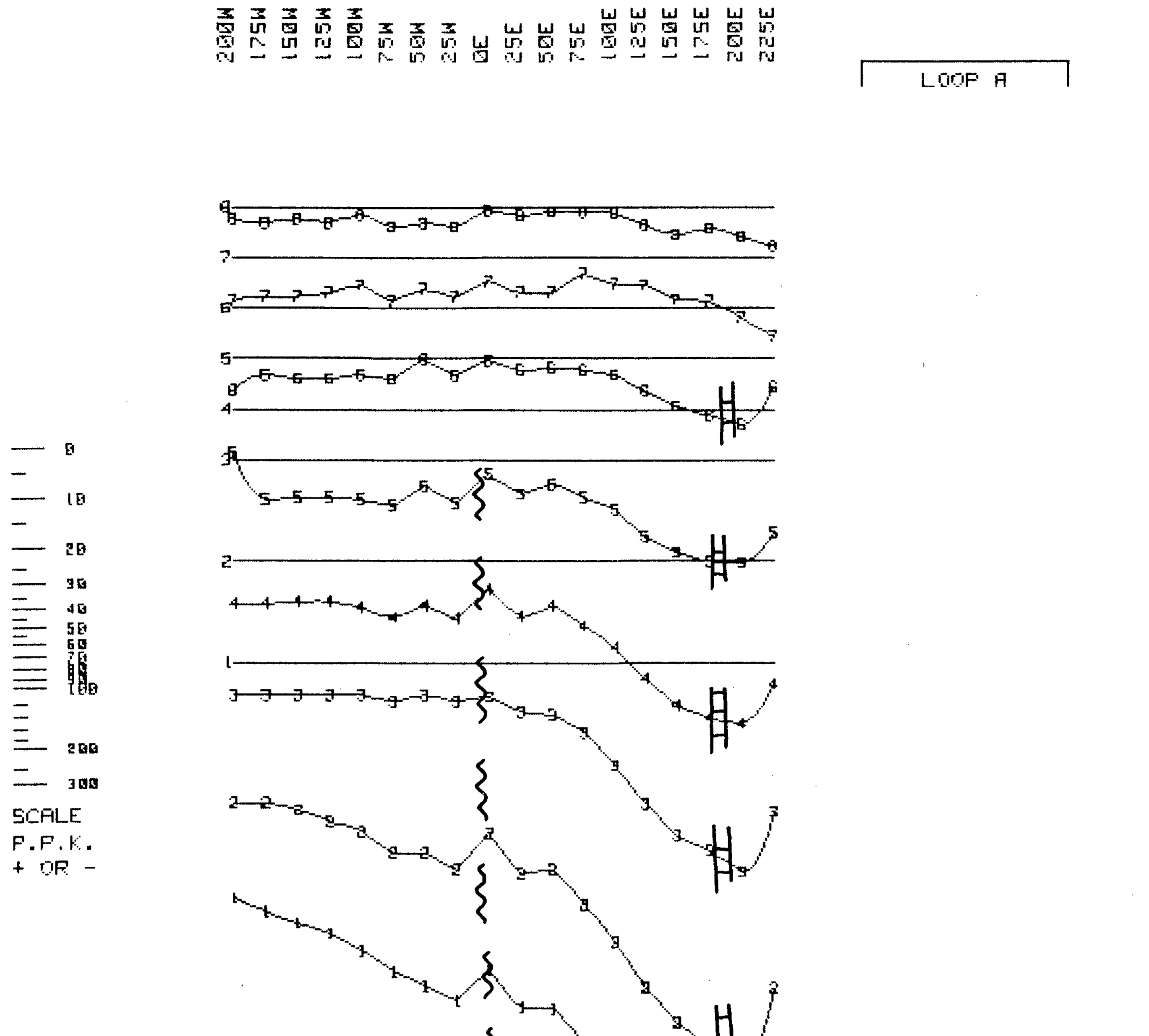
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
200N A

DATE: MAR/81

FIG.: 24

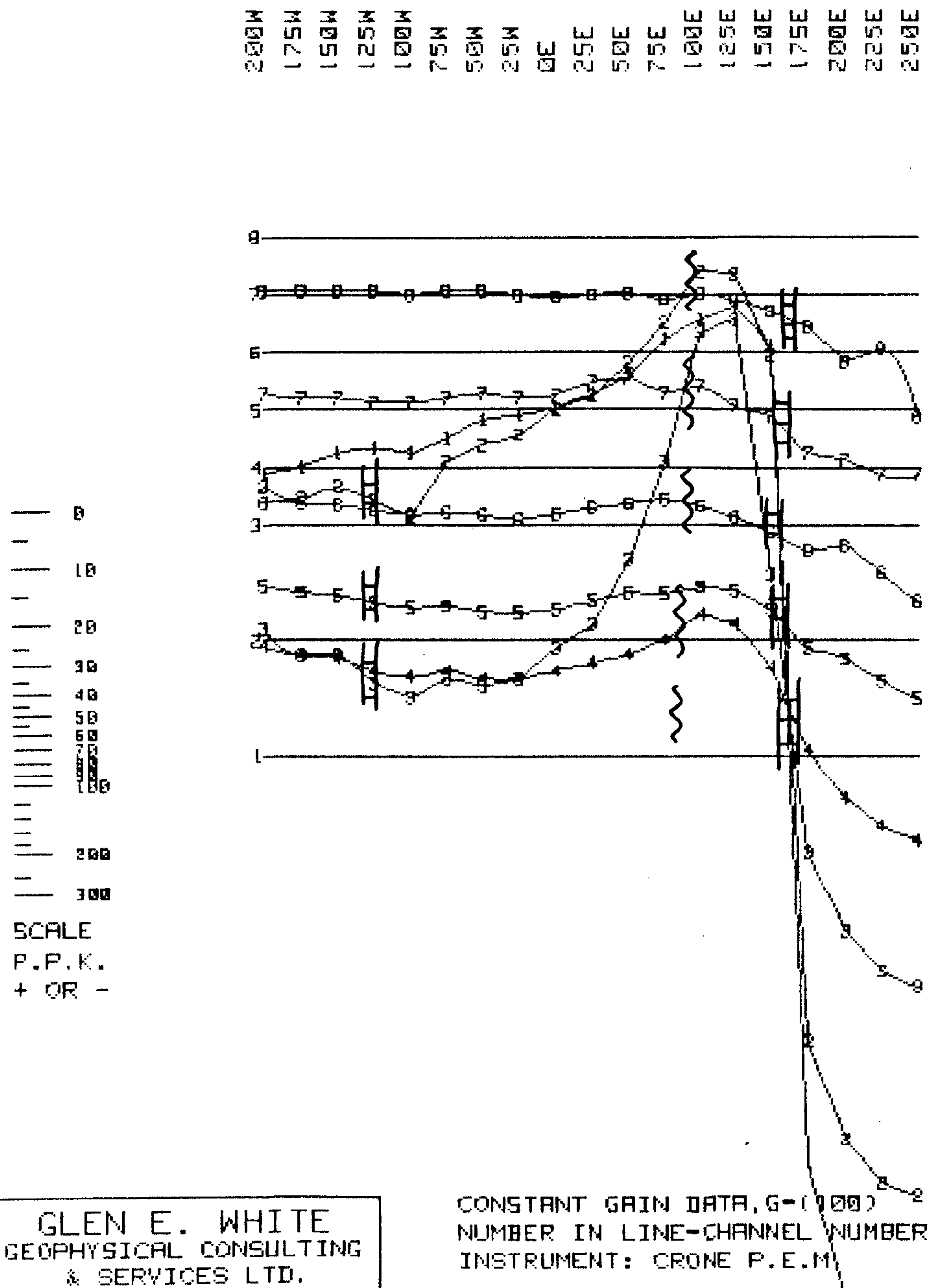



GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
200N A

| DATE: MAR/81 | FIG.: 25 |
|---|---|

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& SERVICES LTD.

CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M

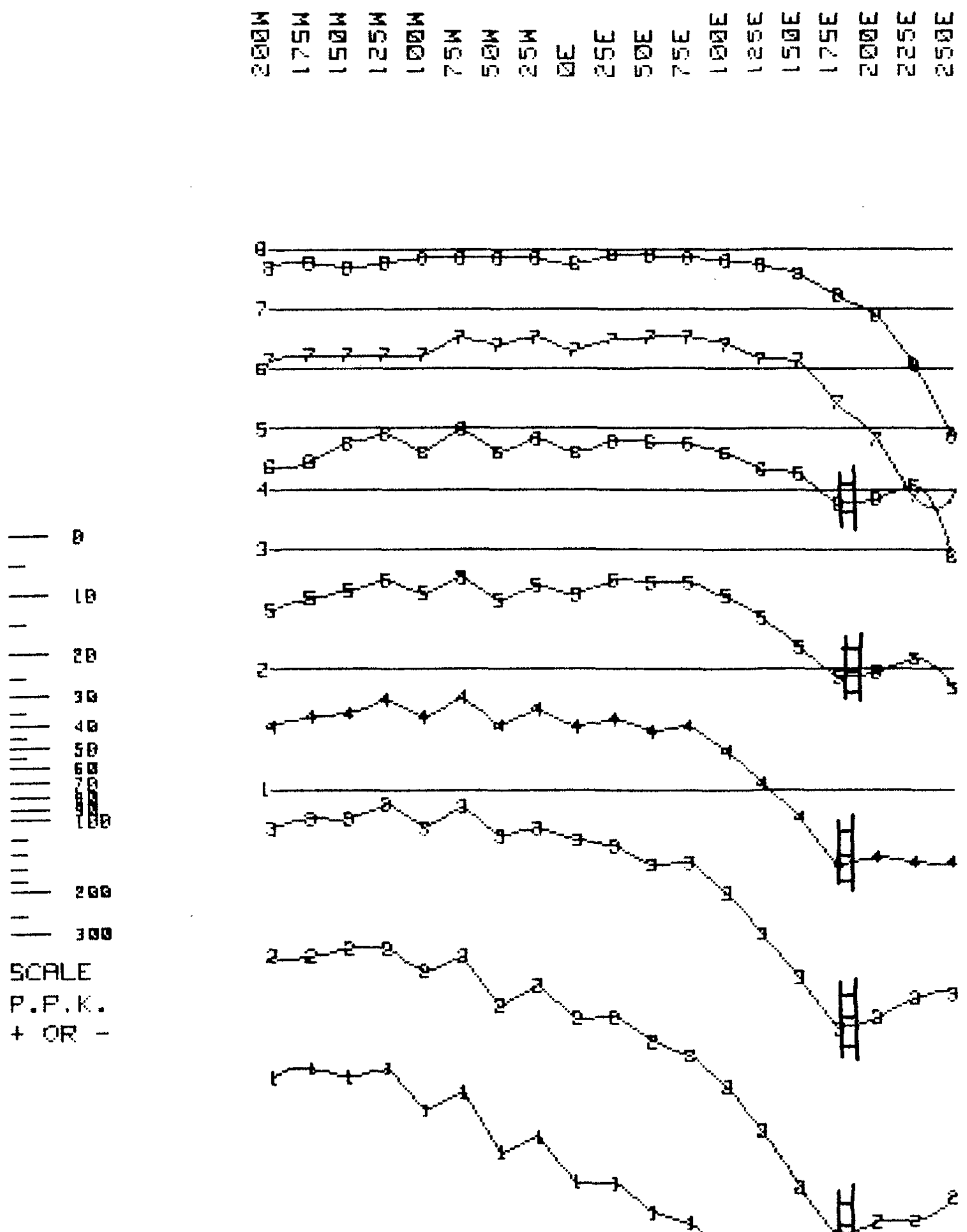
METRES

0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
100N A

DATE: MAR/81

FIG.: 26




LOOP A

CONSTANT GAIN DATA, G-(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
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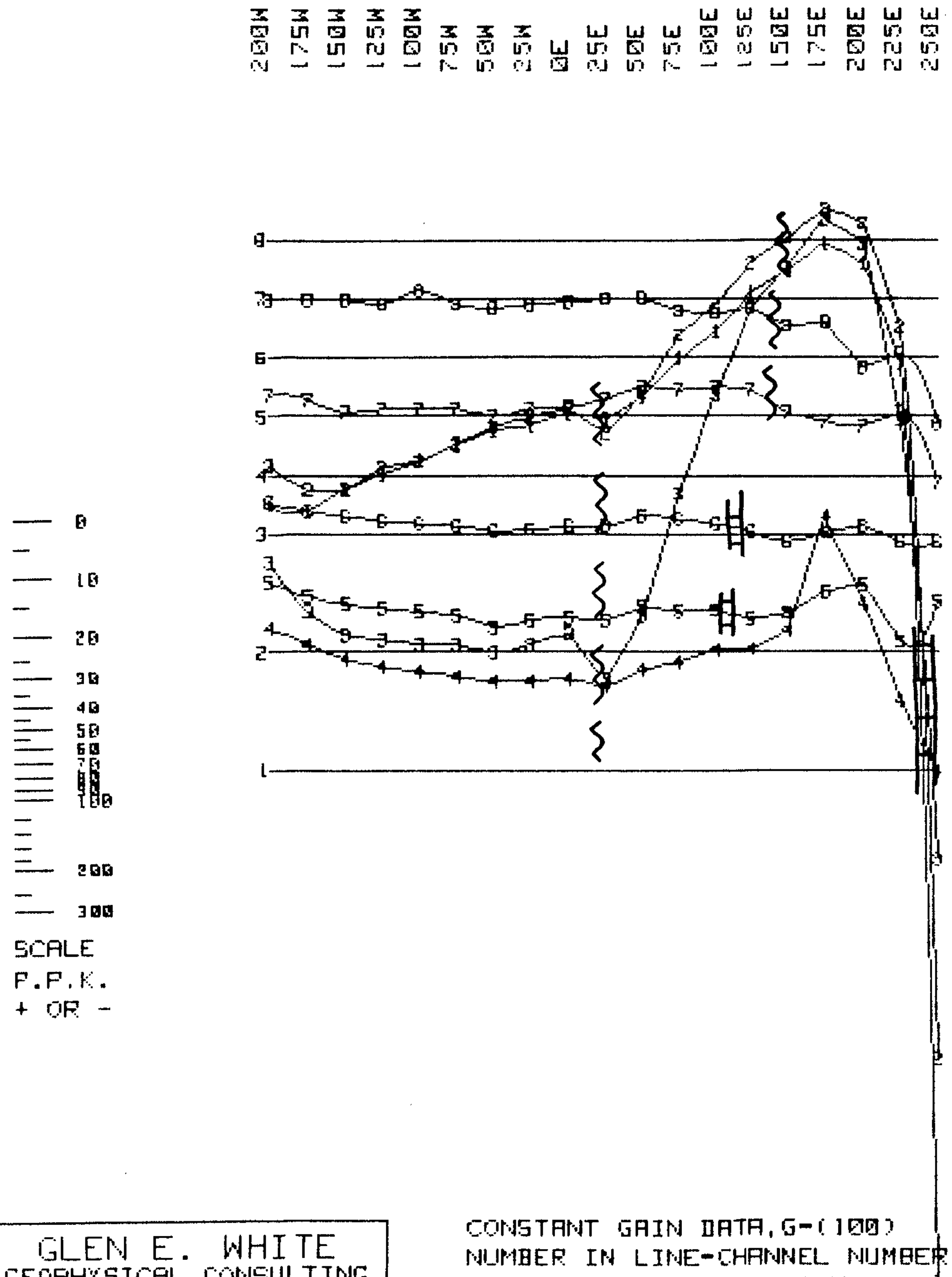
NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
100N A

DATE: MAR/81

FIG.: 27




CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

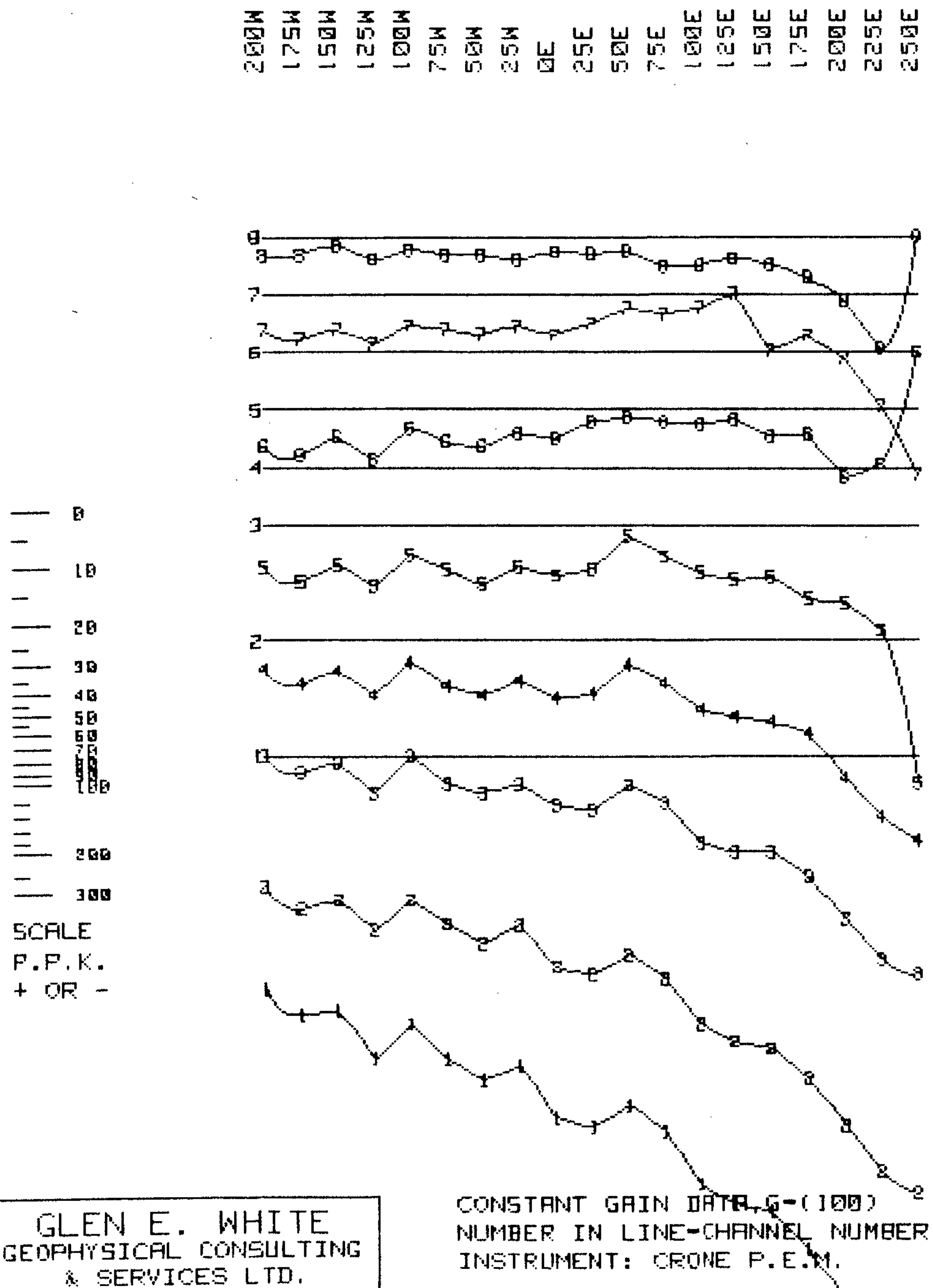
METRES
0 50 100 150 200

GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
000N A

DATE: MAR/81

FIG.: 28




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

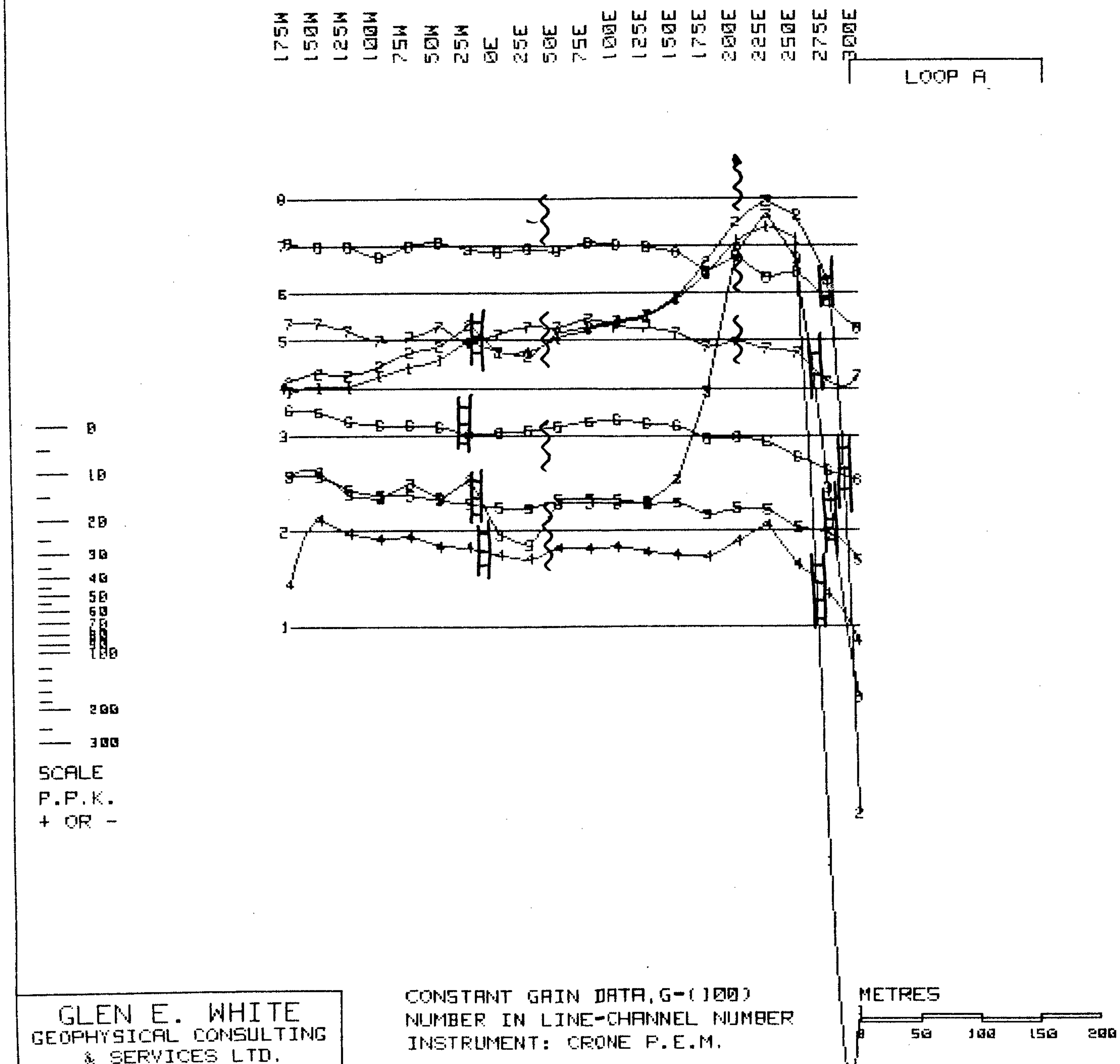
CONSTANT GAIN DATA,G-(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
000N A

DATE: MAR/81

FIG.: 29




GLEN E. WHITE
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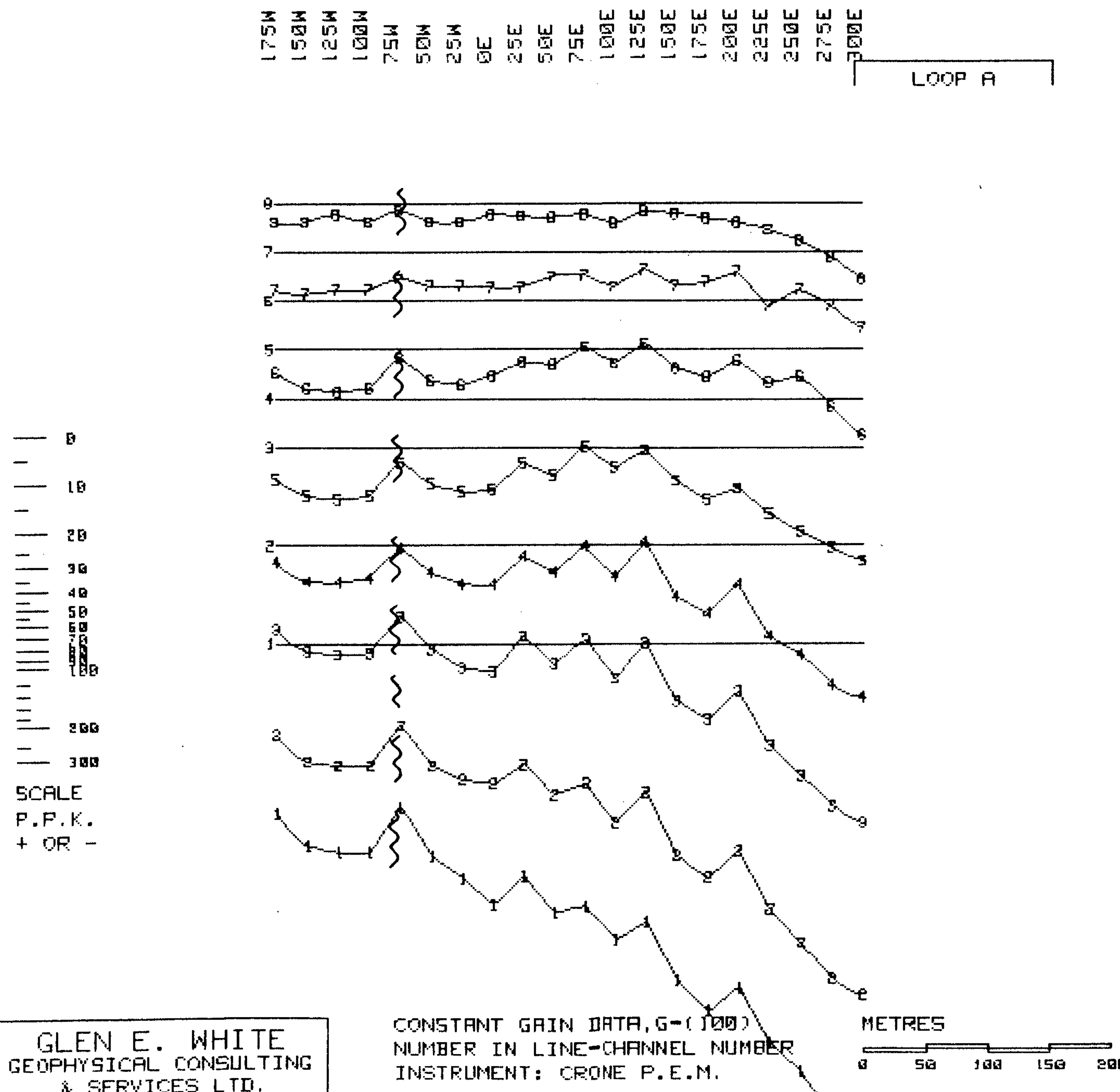
& SERVICES LTD.

CONSTANT GAIN DATA, G-(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
100S A

DATE: MAR/81

FIG.: 30

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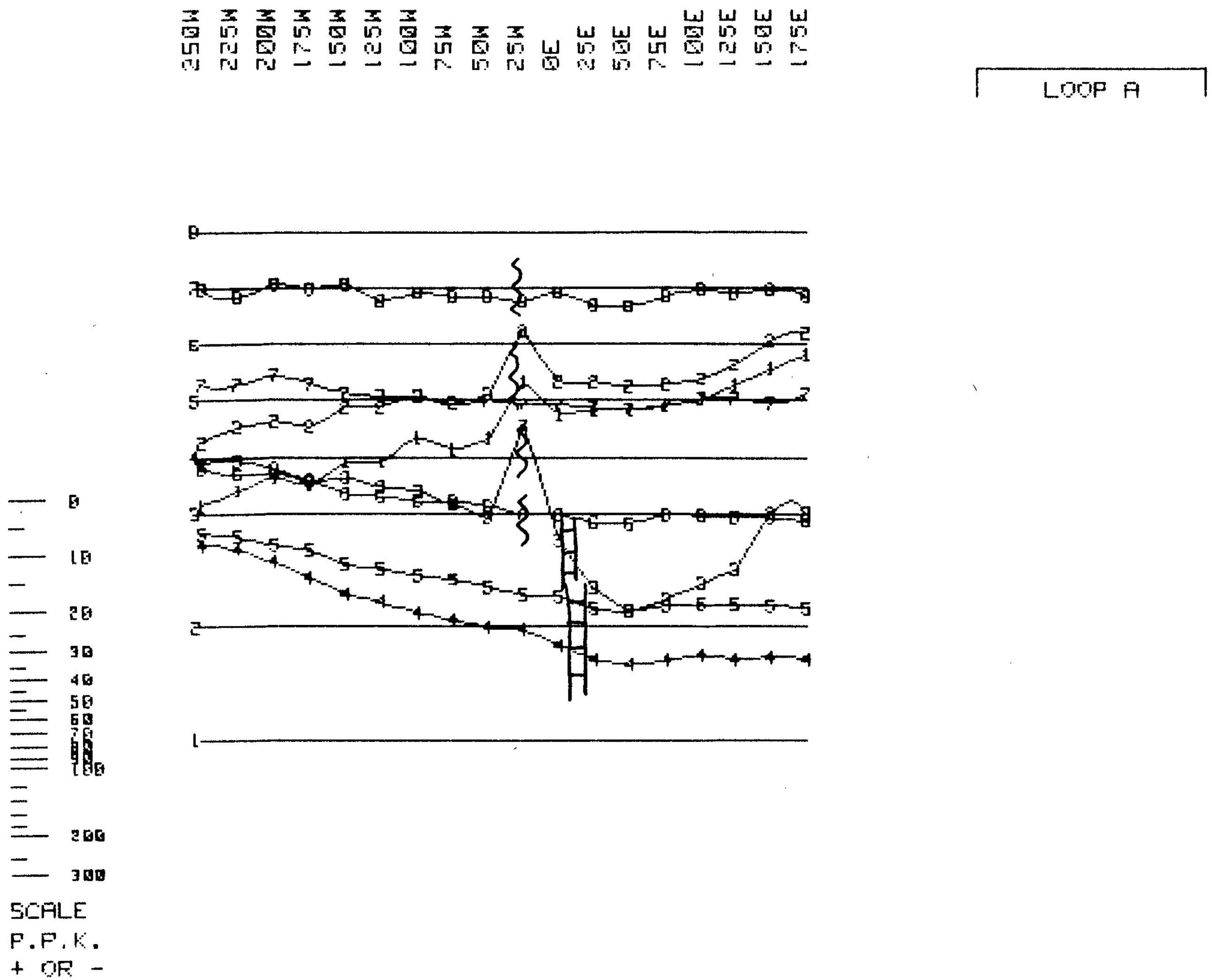
& SERVICES LTD.

CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
100S A

DATE: MAR/81 | FIG.: 31

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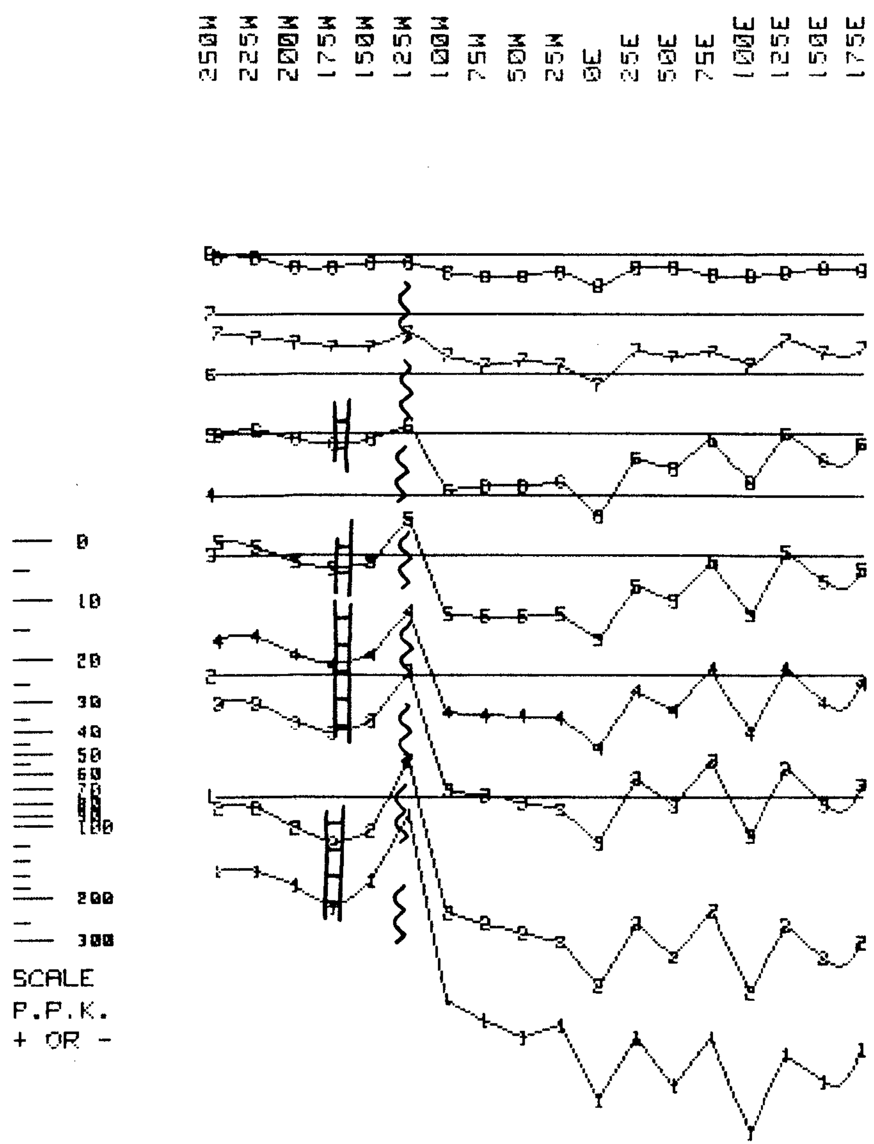
& SERVICES LTD.

CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
2005 A

| DATE: MAR/81 | FIG.: 32 |
|---|---|




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

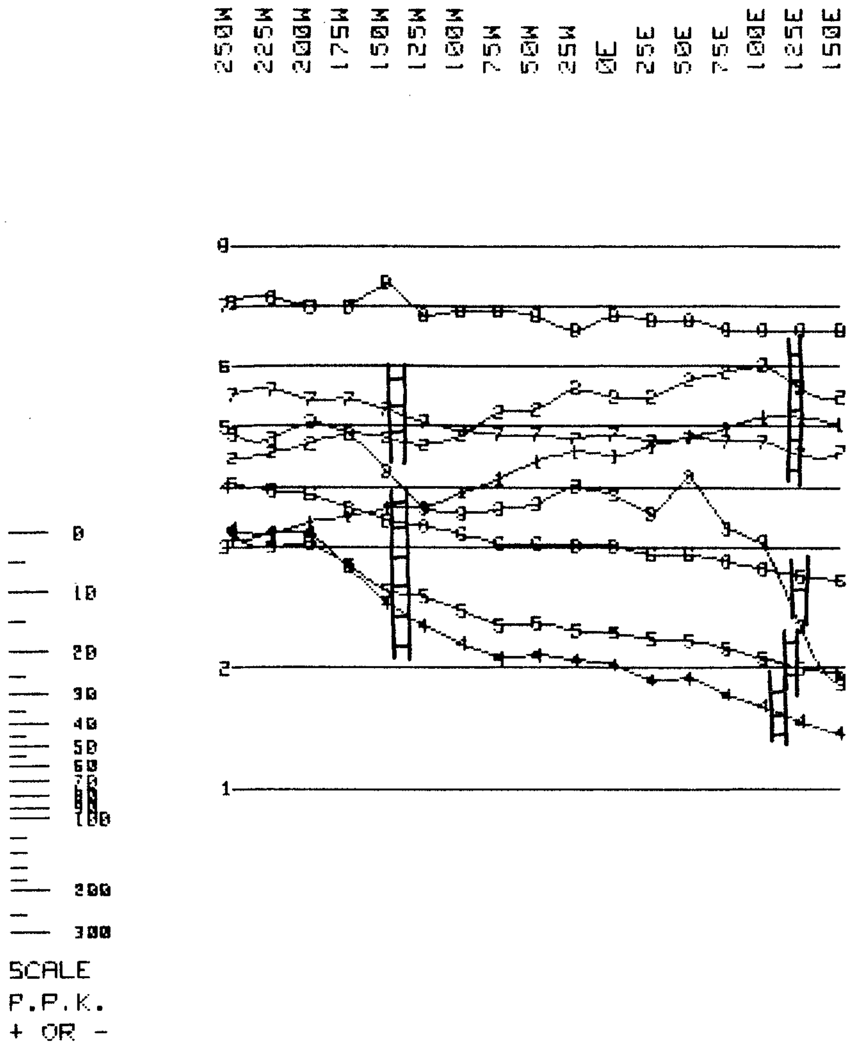
CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

METRES
0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
2005 A

DATE: MAR/81
FIG.: 33

LOOP A




GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE=CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

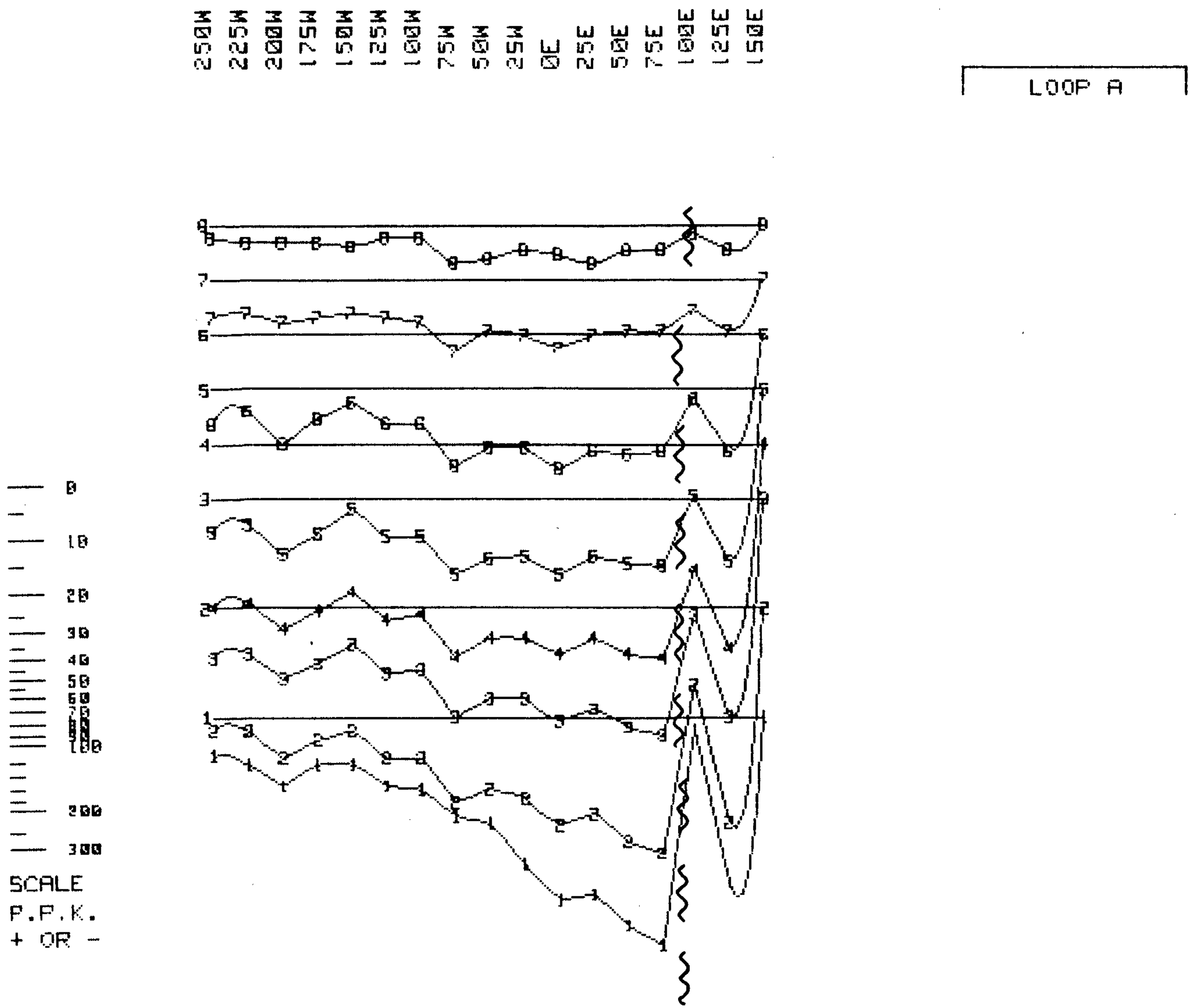
METRES

0 50 100 150 200

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
VERTICAL COMPONENT
300S A

DATE: MAR/81

FIG.: 34




CONSTANT GAIN DATA, G=(100)
NUMBER IN LINE-CHANNEL NUMBER
INSTRUMENT: CRONE P.E.M.

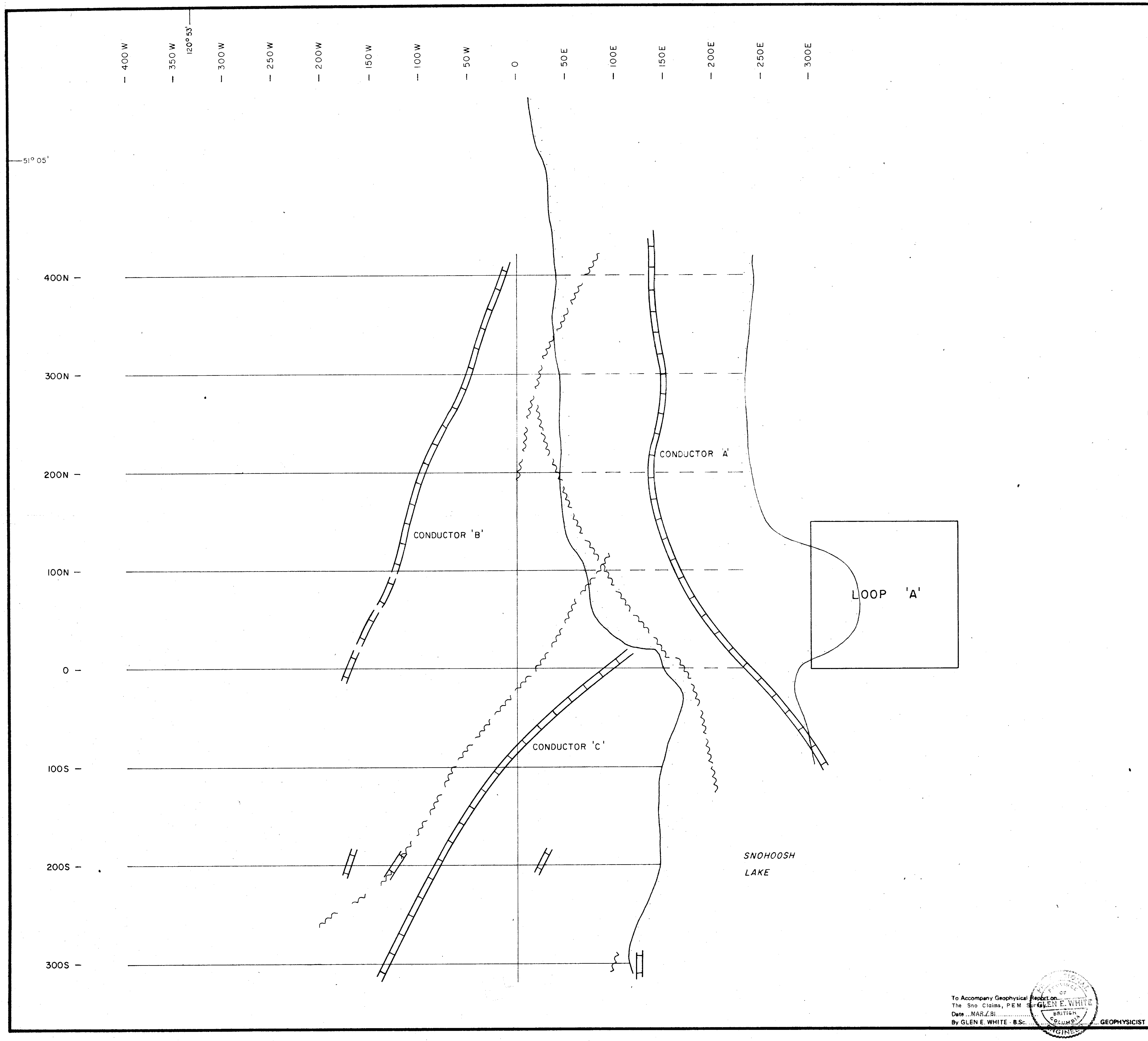
METRES
0 50 100 150 200

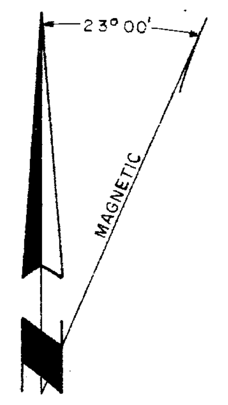
GLEN E. WHITE
GEOPHYSICAL CONSULTING
& SERVICES LTD.

NEWHAWK GOLD MINES LTD.
SNO CLAIMS
VECTOR PULSE ELECTROMAGNETOMETER
HORIZONTAL COMPONENT
300S A

DATE: MAR/81

FIG.: 35




LEGEND

FAULT

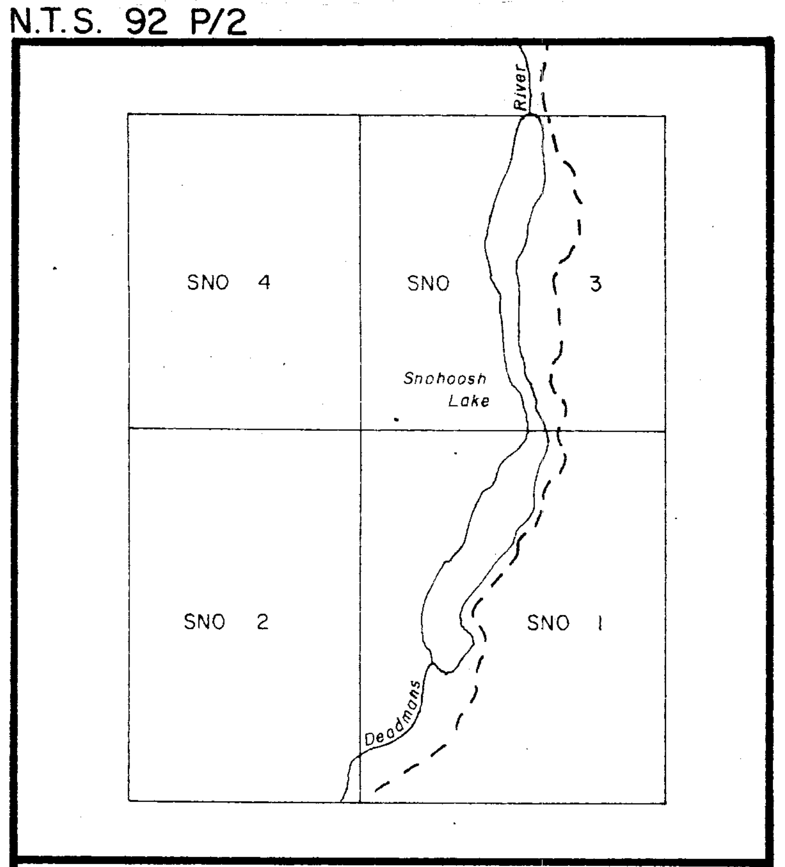
CONDUCTOR AXIS

Part 3

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9136
part 1 & 2

INSTRUMENT: Crone Pulse Electromagnetometer

N.T.S. 92 P/2




LOCATION MAP
1: 50,000 m

50m 25m 0 50m 100m 150m

**NEWHAWK GOLD MINES LTD.**
SNO CLAIMS
CLINTON MINING DIVISION — BRITISH COLUMBIA

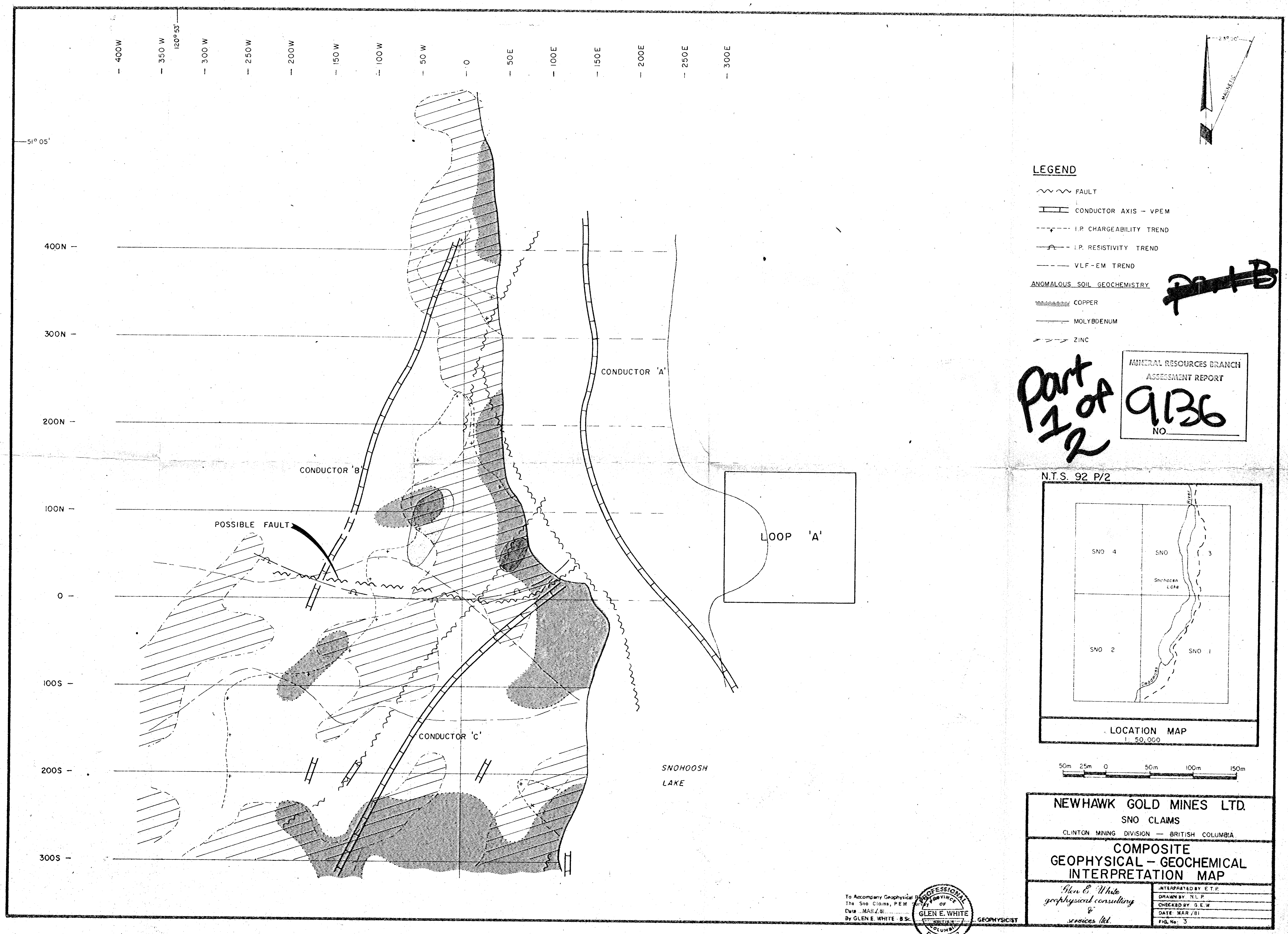
## VPEM INTERPRETATION MAP

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY: E.T.P.
DRAWN BY: N.L.P.
CHECKED BY: G.E.W.
DATE: MAR./81
FIG. No: 2

To Accompany Geophysical Report on
The Sno Claims, PEM Survey
Date ...MAR./81...
By GLEN E. WHITE B.Sc. ............ GEOPHYSICIST

PROVINCE OF BRITISH COLUMBIA
G. E. WHITE
ENGINEER


400W
350W
300W
250W
200W
150W
100W
50W
0
50E
100E
150E
200E
250E
300E
120°53'
51°05'
400N
300N
200N
100N
0
100S
200S
300S
CONDUCTOR 'A'
CONDUCTOR 'B'
CONDUCTOR 'C'
POSSIBLE FAULT
LOOP 'A'
SNOHOOSH
LAKE
MAGNETIC
LEGEND
FAULT
CONDUCTOR AXIS – VPEM
I.P. CHARGEABILITY TREND
I.P. RESISTIVITY TREND
VLF-EM TREND
ANOMALOUS SOIL GEOCHEMISTRY
COPPER
MOLYBDENUM
ZINC
Part 1 of 2
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9136
N.T.S. 92 P/2
SNO 4
SNO 3
SNO 2
SNO 1
Snohoosh Lake
River
LOCATION MAP
1 : 50,000
50m 25m 0 50m 100m 150m
NEWHAWK GOLD MINES LTD.
SNO CLAIMS
CLINTON MINING DIVISION — BRITISH COLUMBIA
COMPOSITE
GEOPHYSICAL – GEOCHEMICAL
INTERPRETATION MAP
Glen E. White geophysical consulting & services ltd.
INTERPRETED BY E.T.P.
DRAWN BY N.L.P.
CHECKED BY G.E.W.
DATE MAR./81
FIG. No: 3
To Accompany Geophysical Report
The Sno Claims, PEM Survey
Date MAR./81
By GLEN E. WHITE B.Sc. GEOPHYSICIST
PROFESSIONAL
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE