GEOPHYSICAL REPORT

On A

PULSE ELECTROMAGNETOMETER SURVEY

On Behalf Of

GRANGES EXPLORATION AB

Jeff and Big J claims, Sicamous area,
Kamloops Mining Division, B. C.
Lat. 50°48'N Long. 119°02'W N.T.S. 82 L/14

AUTHOR: Glen E. White, B.Sc., P. Eng.,
Geophysicist

DATE OF WORK: Nov. 15 - Dec. 3, 1977
DATE OF REPORT: December 28, 1977

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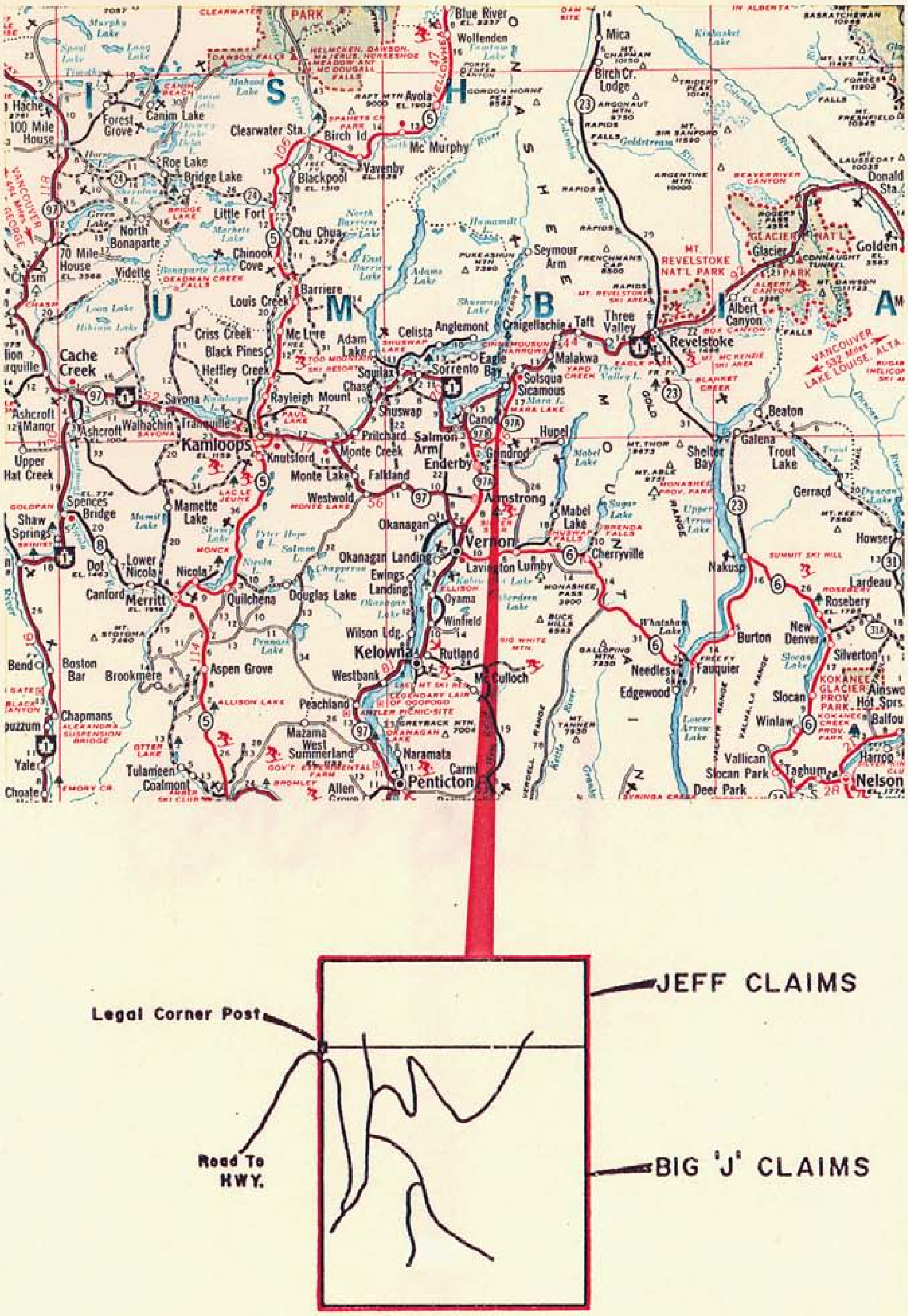


GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

LOCATION AND CLAIM MAP

Glen E. White geophysical consulting & services ltd.

SCALE : 1" = 40 MILES

DEC. 5, 1977
FIG. 1

C O N T E N T S

INTRODUCTION

A pulse electromagnetometer survey was conducted during the period Nov. 15/77 - Dec. 3/77 on the Jeff and Big J mineral claims, Sicamous area, on behalf of Granges Exploration AB.

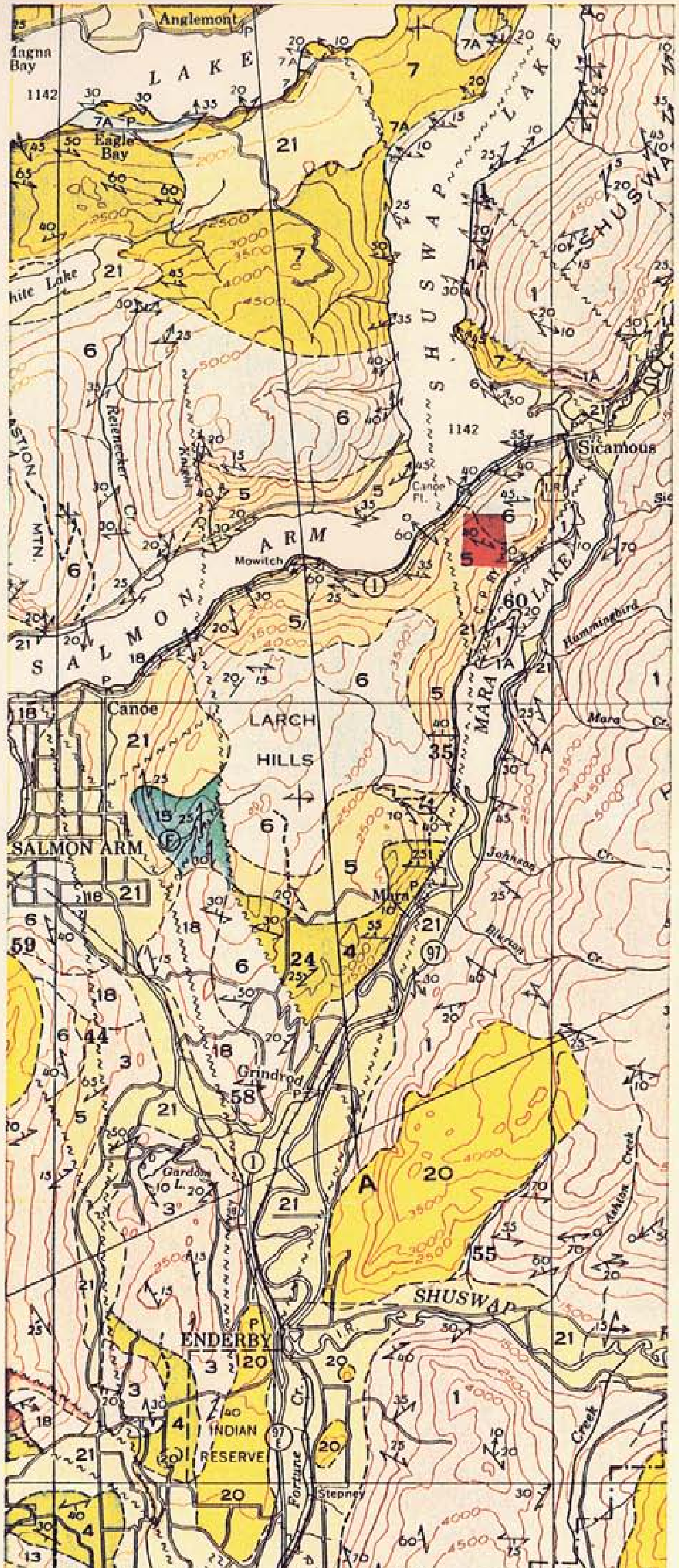
The survey was conducted to try and delineate any electromagnetic conductors that may be associated with massive sulphide mineralization indicated in a number of old surface pits. The mineralization consisted of various concentrations of pyrrhitite, pyrite, galena, sphalerite and chalcopyrite.

PROPERTY

The property consists of the Jeff and Big J mineral claims comprising some 12 contiguous units as illustrated on Figure 1.

LOCATION AND ACCESS

The survey area is located on a plateay - ridge between the Salmon Arm of Shuswap Lake and Mara Lake, Latitude 50°48'N, Longitude 119°02'W, N.T.S. 82 L/14, Kamloops M. D., B. C.



PROTEROZOIC AND/OR PALÆOZOIC

WINDERMERE (?) OR EARLY PALÆOZOIC
LARDEAU SERIES

12 — *Argillite, phyllite, schist, quartzite, limestone, conglomerate*

WINDERMERE (?) OR CAMBRIAN

11 — *BADSHOT FORMATION: limestone and*

WINDERMERE OR (?) CAMBRIAN
HAMILL SERIES

10 — *Quartzite, staurolite schist, argillite, p minor limestone*

WINDERMERE OR EARLIER

9 — *OLD DAVE INTRUSIONS: serpentiniz*

ARCHÆAN OR LATER

S H U S W A P

MOUNT IDA GROUP (1-7)

7, 7A — *EAGLE BAY FORMATION: chlorite and sericite schist, slate, limestone, quartzite; minor conglomerate*
7A. *Predominantly limestone*

6 — *SICAMOUS FORMATION: flaggy limestone, sericite schist, graphite schist*

5 — *MARA FORMATION: argillite, slate, sericite and chlorite schist, limestone*

4 — *TSALKOM FORMATION: green andesite and agglomerate; chlorite schist; slate*

3 — *SILVER CREEK FORMATION: slate, sericite schist; garnetiferous quartz-mica schist*

2 — *CHASE FORMATION: quartzite calcareous quartzite; garnetiferous quartz-mica schist*

MONASHEE GROUP

1, 1A·C — **1.** *Granitoid gneiss, augen gneiss, mica-quartzite, marble, hornblende gneiss, s*
1A. *Limestone*
1B. *Quartzite*
1C. *Hornblende gneiss*

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GEOLOGY MAP

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SCALE : 1" = 4 MILES

PLATE I

Access is by a four wheel drive road which branches off the Trans-Canada Highway approximately 23 km (14 miles) northeast from the town of Salmon Arm.

GENERAL GEOLOGY

The general geology of the area is shown on Geology Map 1059A of the Vernon area. The property is shown to be underlain by the Shuswap Terrane of Archaean age or later. Specifically, the claim group is underlain to the north by the Sicamous formation consisting of flaggy limestone, sericite schist and graphite schist, and to the south by the Mara formation consisting of argillite, slate, sericite, chlorite schist and limestone. The survey grid covers an area of old workings consisting of a small exploratory audit and several trenches. This property is referred to as the Annis Mines property in the B. C. Department of Mines reports 1964, 1967 and 1970. The audit was driven in 1958 to intersect an extension of a surface showing. No mineral was intersected by the audit. The mineralization in the trenches is reported as galena, sphalerite, chalcopyrite, pyrite and pyrrhotite in country rocks of quartzites and schists.

SURVEY SPECIFICATIONS

Survey Grid

The survey grid was cut by a line cutting crew from Granges Exploration AB. Some 25 km of baseline and traverse lines were established. The traverse lines were orientated in a northwest - southeast direction at right angles to a northeast - southwest directed central baseline. The lines were spaced at 75 m intervals and were designated as lines 1W, 2W, 3W or east etc. from a central survey line. The survey lines were flagged, chained and numbered at 25 m intervals.

Pulse Electromagnetometer Survey

The PEM system is used primarily in the horizontal loop configuration. The transmitter consists of a transmit loop 6 meters in diameter that is laid out horizontally on the ground. The loop is energized by a pulse of 15 to 20 amps at 24 volts. The current is turned off by a special ramp circuit. The on-off time is 10.8 ms. The receive coil is generally spaced 25 - 100 meters from the transmit loop. The signal on the receive coil is sampled, averaged and then stored during the reading interval. One sample is taken of the primary pulse and eight samples are taken of the secondary field during the off time. Time synchronization is by radio link or cable.

The eight channels of secondary field information are equivalent to a wide spectrum of frequency information from approximately 2 KH_z to 16 H_z which allows for determination of overburden effects and penetration of conductive overburden. Since the secondary field is measured directly during the primary field off time, the pulse method is free of geometrical restrictions between the transmit and recieve coil positions, such as topography interference and coil alignment.

A separation of 50 m was used for the survey.

DISCUSSION OF RESULTS

Figure 2 illustrates the interpretated conductors and conductor trends. For facile identification they have been designated conductor trends A, B, C and D. Individual conductors within a conductor trend have then been numbered A_1, A_2 etc.

Conductor trends C and D are each in a broad zone of strong negative background responses as illustrated by the depression symbols. These areas of negative background likely reflect the underlying geology and may possibly be caused by conductive graphite bearing rocks and/or chlorite-sericite schists. Conductor trends A and B would appear to be in a different rock type of less conductivity, possibly quartzites and related schists.

Figure 3 - Line 11W shows the typical conductive background response which affects channels 1 - 5.

Figure 4 - Line 9W detected a strong conductor (D_1) at 2S and a weaker one at 0 ≠ 75S.

Figure 5 - Line 8W shows conductor D_1 at 2S in the center of a broad conductive zone.

Figure 6 - Line 7W; here the broad conductor trend turns nore east-west obliquely to the survey lines. Conductor D_1, now possibly a number of parallel conductors, appears to flatten out with a dip of some $30^\circ - 50^\circ$ to the north. Conductors D_2 and D_3 show similar conductor patterns to the continuation of conductor D_1 (Figures 7 - 10).

Figure 9 - Line 4W from 2N - 6N shows a typical broad formational conductor. However, superimposed on this at 4 ≠ 50 N, the electromagnetic response is more typical of a flat conductor or off-end conductor response reflecting conductor C_2 on line 3W. There is also the possiblilty that conductors C_1 and C_2 form a

fold structure.

Figure 10 - Line 3W illustrates conductors C_1, C_2 and the extension of D_2. D_2 is a multiple channel response whereas C_1 and C_2 respond in the upper channels indicating poorer electromagnetic conductors. Conductor C_2 extends to line 2W, Figure 11 where it has decreased slightly in amplitude. A vertical loop detail profile, Figure 28, on line 2W at 2N indicates a conductor axis at 1 ≠ 87 N at a depth of 15m. At 2W - 1S is the off-end response of conductor C_3. Conductor C_3, though it is in the same broad conductive trend as C_1 and C_2, is a strong multichannel response and likely reflects at least two closely spaced parallel conductors, Figure 12. This conductor shows a definite increase in amplitude on line 1BW, Figure 13, where it indicates an apparent dip of some 30^{o} - 50^{o} to the north. A vertical loop profile, Figure 27, shows a current axis at 2 ≠ 60S at a depth of some 12m. A current axis does not determine the depth extent of a conductor but the point at which the maximum amount of current flows and thus the optimum conductive point within the conductor. This conductor would appear to represent a zone some 10m in thickness.

Line 1AW, Figure 14 shows a strong conductor response at 2 + 75N which extends through channels 1 - 7 and indicates possibly two closely spaced conductors. The strong response at 3S is the continuation of conductor C_3 which extends through to Line 2E. In all cases this conductor shows an apparent northerly dip. It also appears to decrease in conductivity and/or depth extent as the response on 2E at 6S is reduced to a four channel anomaly. Line 0 at 1 + 75N, Figure 15, shows a perfectly symmetrical vertical dike-like response of a near surface excellent conductor. Detailing was undertaken over this conductor with extra separations of 25m and 75m as shown on Figure 16. The profiles tend to indicate a near surface conductor of some 3 - 7 m in width. Vertical profiles with separations of 50m and 75m were undertaken to try and detect a principle current axis; see Figure 26. Both separations show a current axis at 1 + 75N at a depth of 3m which suggests that the top portion of this conductor is of high conductivity and focuses the current flow near surface. However, since the anomaly extends strongly through all channels, the conductor likely extends to depth but decreases in conductivity as it does so.

A decay curve plot of several anomalies is shown in Figure 29. The responses from the symmetrical anomaly from Line 0 at 1 + 75N are shown from separations of 25, 50 and 75 m. All three responses show similar decay characteristics but vary in amplitude. A negative flank response from 0 - 1 + 75N, a = 50 m was also plotted to see if the flank responses showed the same decay characteristics as the zenith points. Two decay curves were also plotted from anomaly C_3, one from a zenith point at 0 - 3 + 75S and the other from a flank response at 1BW 3 + 25S. Again both curves show the same characteristics, separated only by amplitude. Moreover, the latter two curves suggest anomaly C_3 is different from anomaly B_1 in that the C_3 decay curve is composed of two definite decay curve gradients. Anomaly B_1 has a longer time constant and thus would appear to be a more conductive body.

Figure 17 shows a small blip from conductor A at 1E - 6N. Conductor B_2 at 1E - 0 + 50N may possibly be a NE continuation of B_1 that has narrowed down or increased in depth. An extension of conductor C_3 occurs at 5 + 50S where it shows as a very strong 30° - 50° northerly dipping conductor. This conductor trend shows a decrease in intensity NE-ward to line 2E.

Figure 18 of line 2E shows conductor A which likely reflects mineralization that the old audit was to investigate. Conductor A is a very weak conductor and may possibly dip flatly to the SE with respect to the topography. Thus the audit which is some 30 m away at an oblique angle to the conductor trend likely did not investigate this conductor. Conductor B_2 at 2E - 0 has increased in amplitude and would appear to be composed of a good conductor at 0 flanked by a narrow weaker one near 0 ≠ 30 m N.

Line 3E, Figure 19, shows a small conductor at 2N which has been interpreted as the NE extension of conductor A. The strong conductor at 2S, B_3, shows an apparent SE dip. The extension of this conductor to line 4E, Figure 20, shows a very irregular response possibly from a number of narrow finger-like electromagnetic conductors.

Figures 21 - 25, Lines 5E - 9E, detected no electromagnetic responses. Thus, conductor trends A and B have been closed out to the SW and NE whereas conductor trends C and D would appear to be open to the NE.

CONCLUSION

The pulse electromagnetometer survey conducted over the Jeff and Big J mineral claims detected 4 strong conductor trends which have been designated north to south as A, B, C and D, irrespective of significance. Conductor trends A and B are in an area of no background response whereas conductors C and D are in background depression areas of sone -25 p.p.k. Thus, conductors C and D may possibly be associated with conductive rock formations containing graphite and/Or clay minerals.

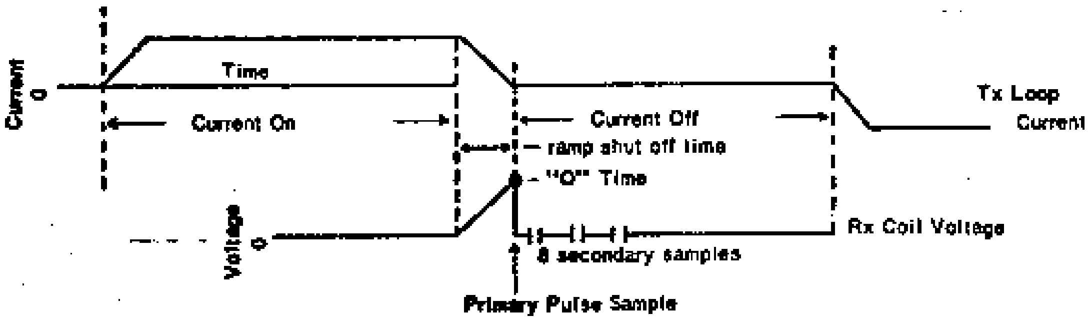
RECOMMENDATIONS

The conductor trends A, B, C and D obtained by this survey can be rated as very significant and likely reflect massive sulphide mineralization and/or pronounced graphite zones. It is recommended that these zones be tested by diamond drilling. Moreover, since a number of the anomalies would appear to be near surface, a detail geochemical survey may facilitate in selecting a specific target zone along an individual conductor trend.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.

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

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, 8.55ms.

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) 8.55ms
– 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

STATEMENT OF QUALIFICATIONS

Name:	WHITE, Glen E.
Profession:	Geophysicist
Education:	B.Sc. Geophysics - Geology University of British Columbia
Professional Associations:	Associate member of Society of Exploration Geophysicists. Vice-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 Explorations 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. Six years Consulting Geophysicist. Active Experience in all Geologic provinces of Canada.

COST BREAKDOWN

Personnel	Date Worked	Wages	Total
C. Candy	Nov. 15-Dec. 3/77	$83/day	$1453.00
J. Miller	" "	75/day	1313.00
S. Berryman	" "	72/day	1260.00

Meals and accomodations @ $25/day/man..........1312.00

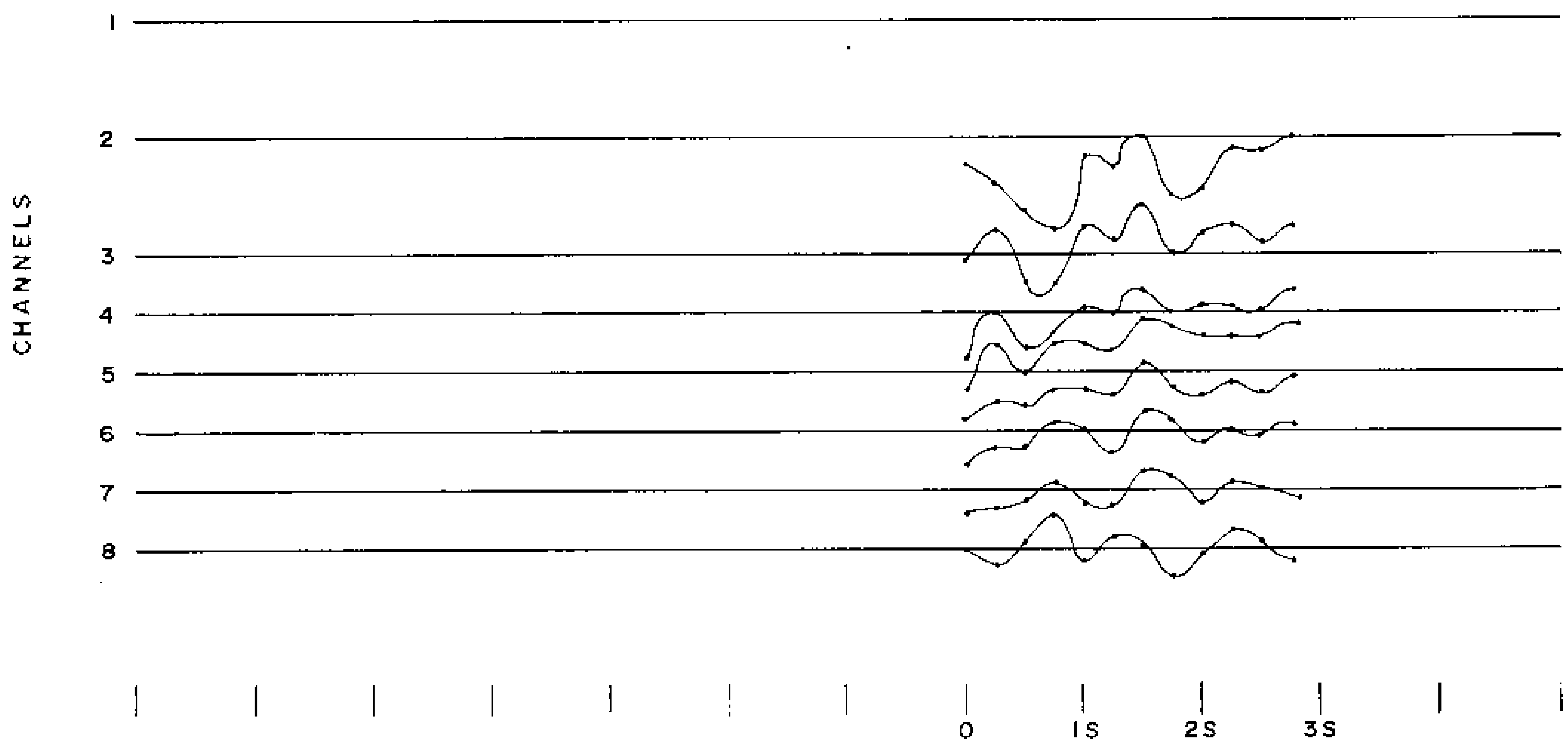
Instrument lease..............................1137.00

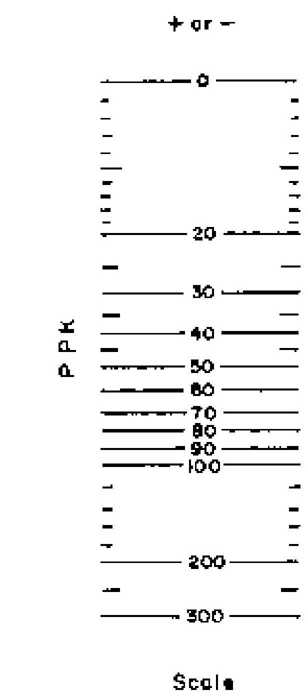
Vehicle 4x4 including gas.....................525.00

Drafting supervision interpretation

and reports...................................985.00

Total....$7985.00





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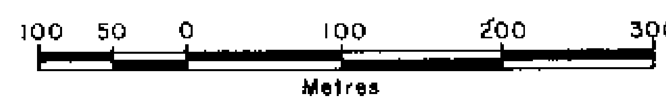

N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 11W

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INTERPRETED BY:	G.E.W.
DRAWN BY:	T.M.
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FIG No.:	3

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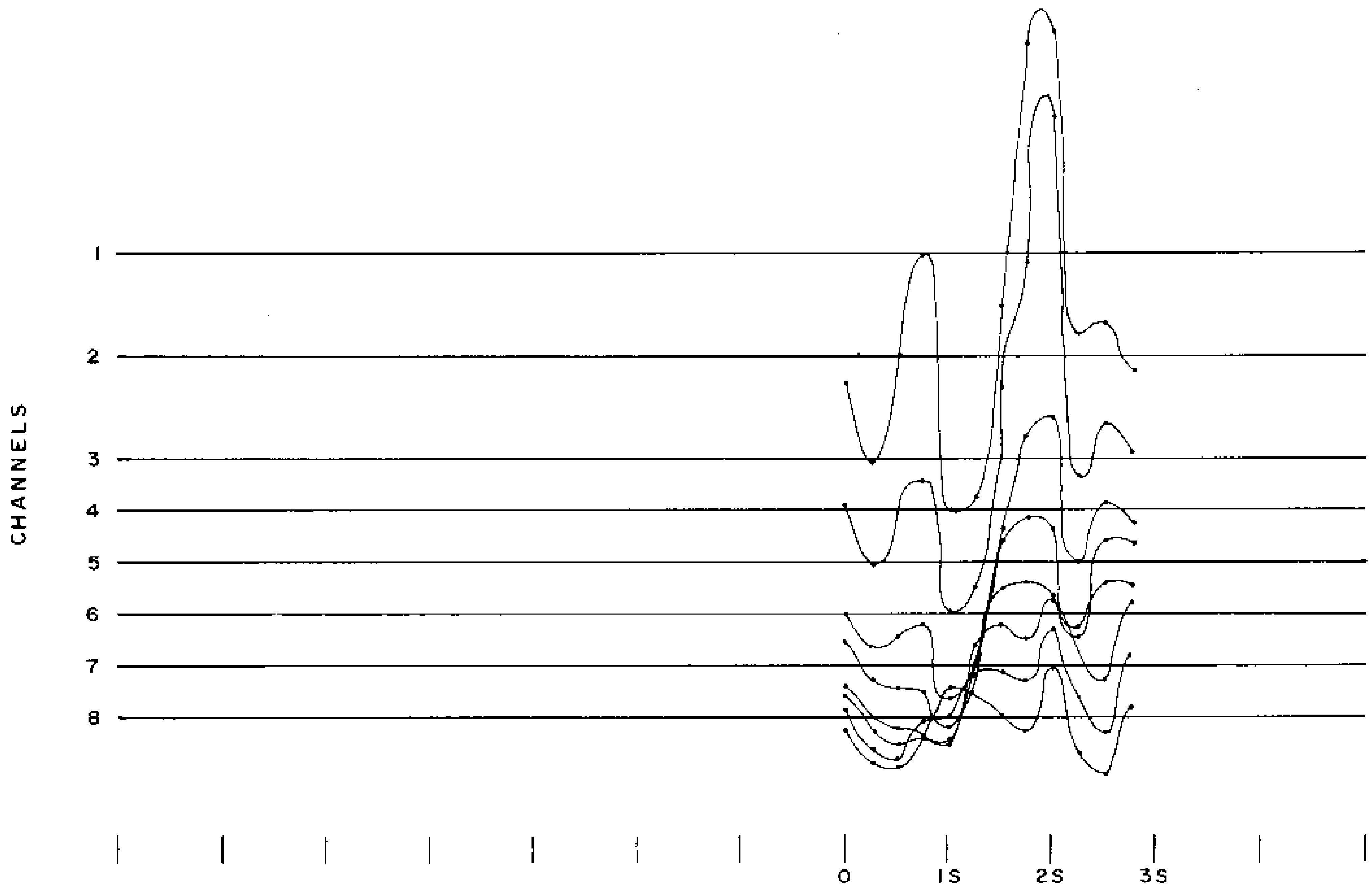
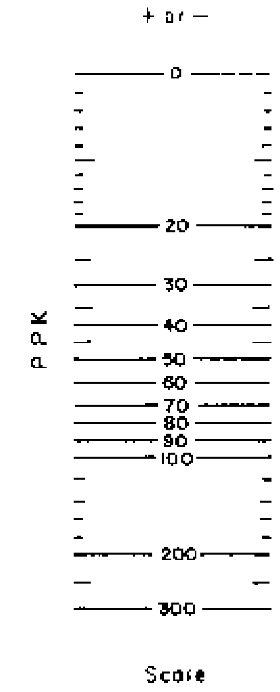
Date ....
By GLEN E WHITE B.Sc. GEOPHYSICIST

GLEN E. WHITE
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA





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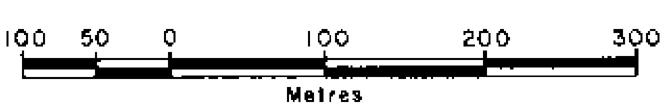

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LINE 9W

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FIG No.: 4	

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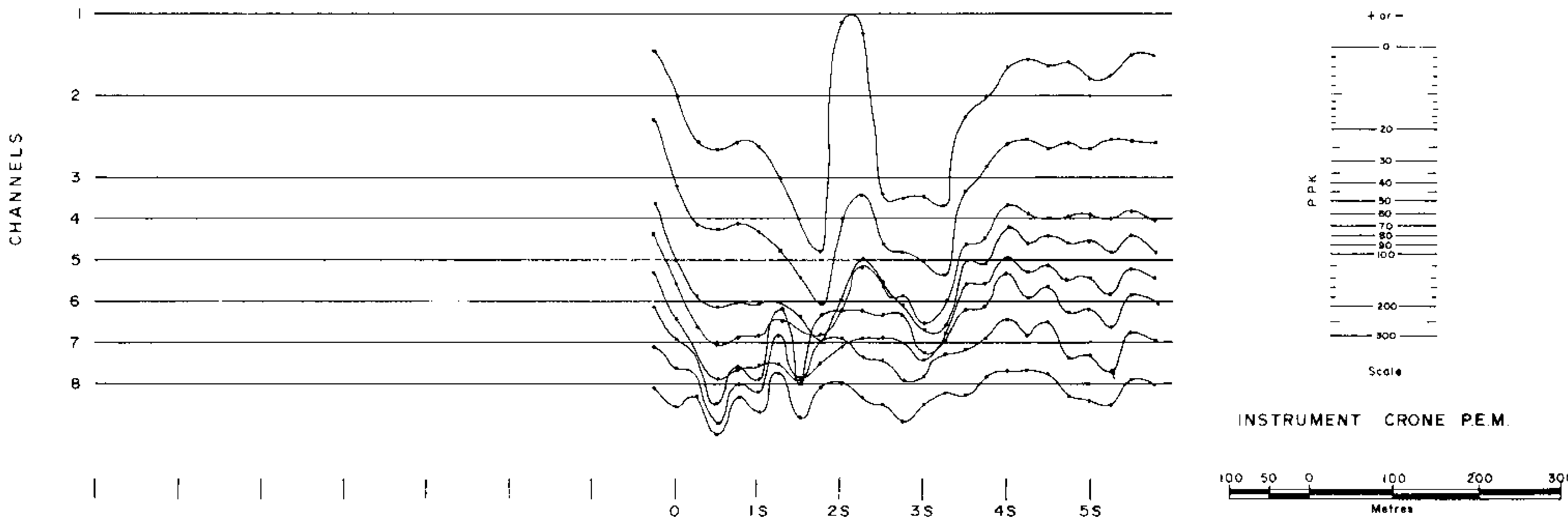
GLEN E. WHITE
BRITISH COLUMBIA



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SEPARATION 50 METRES

LINE 8W

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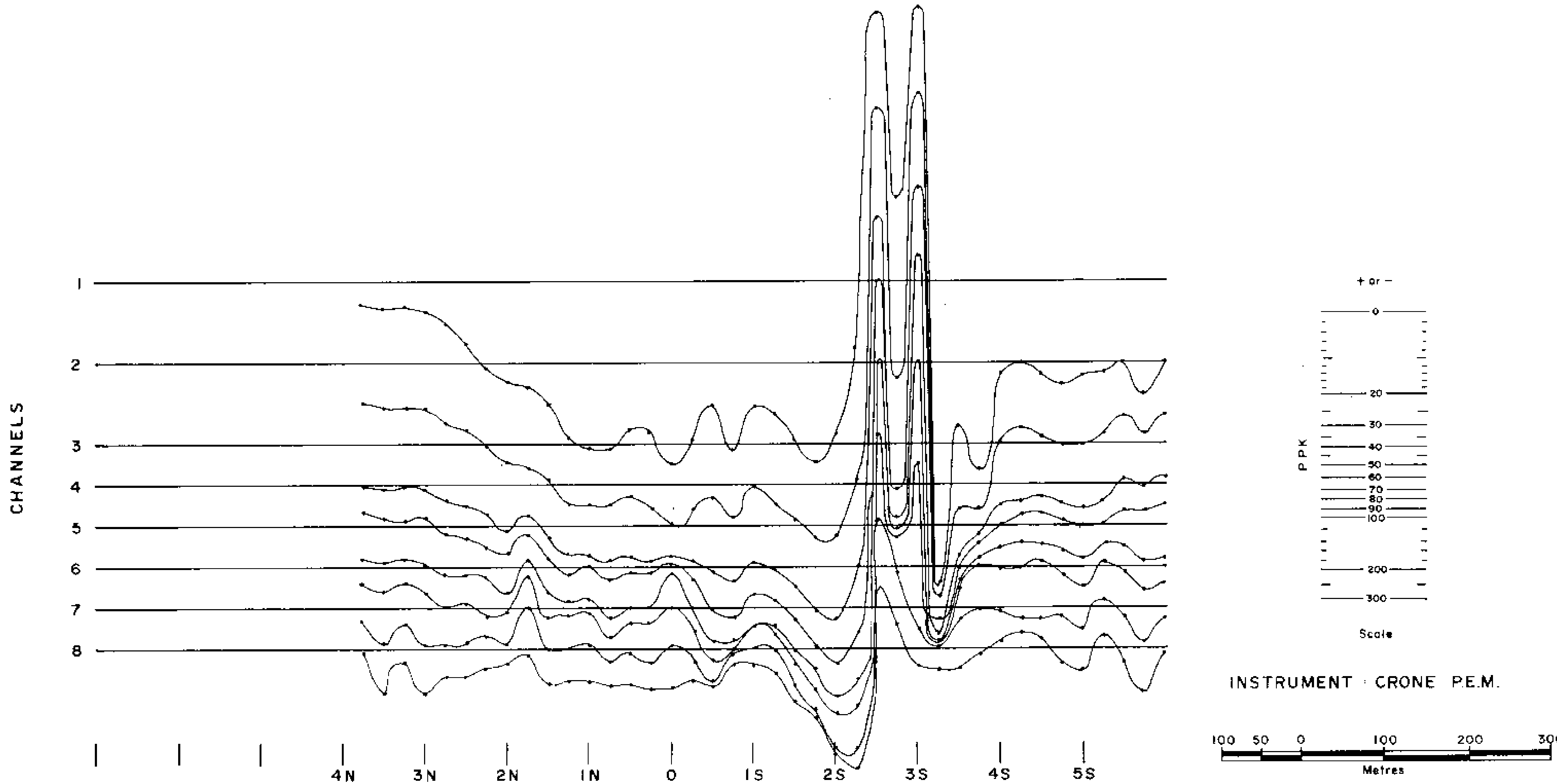
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE



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LINE 7W

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FIG No. : 6	

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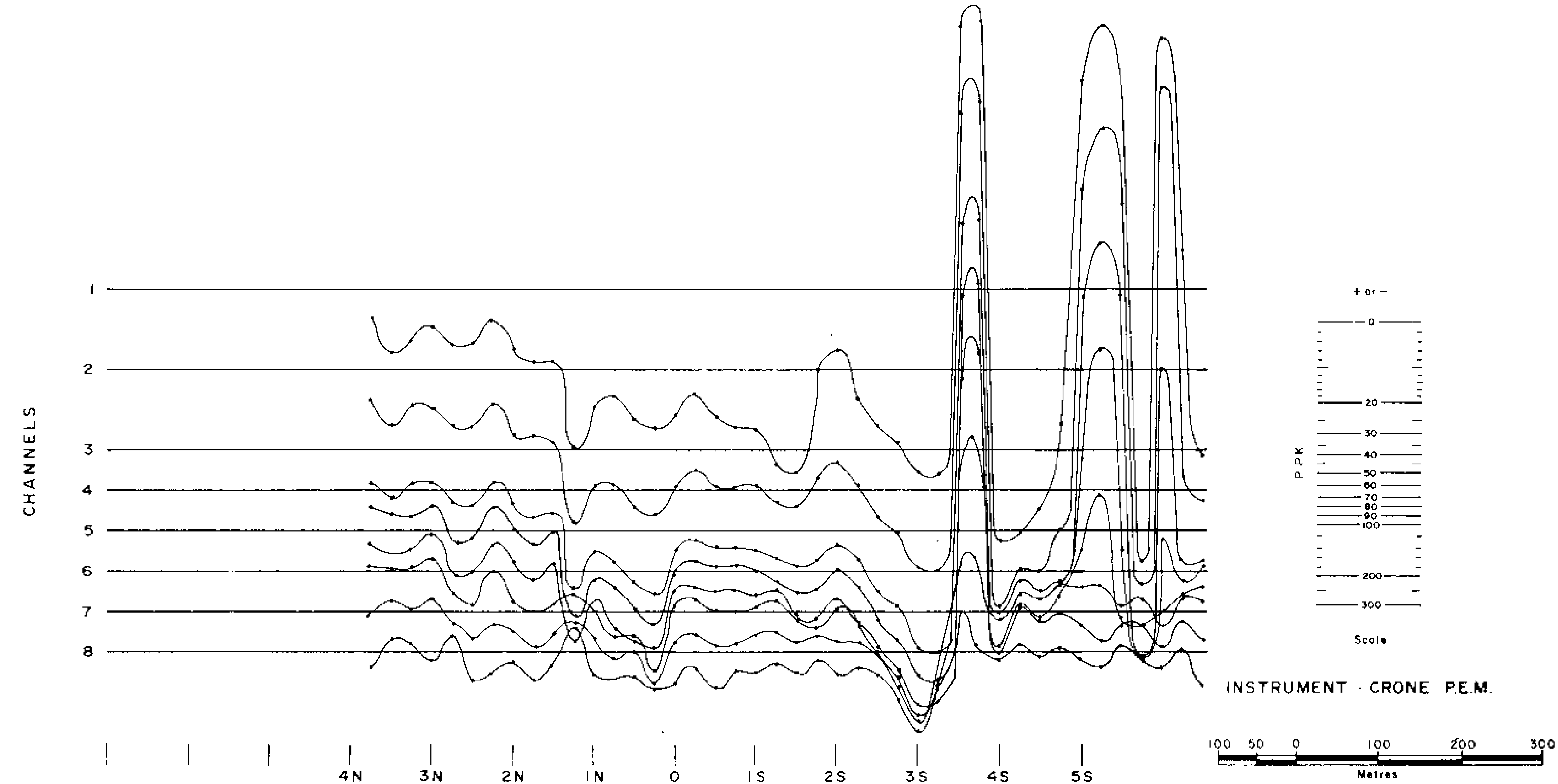

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LINE 6 W

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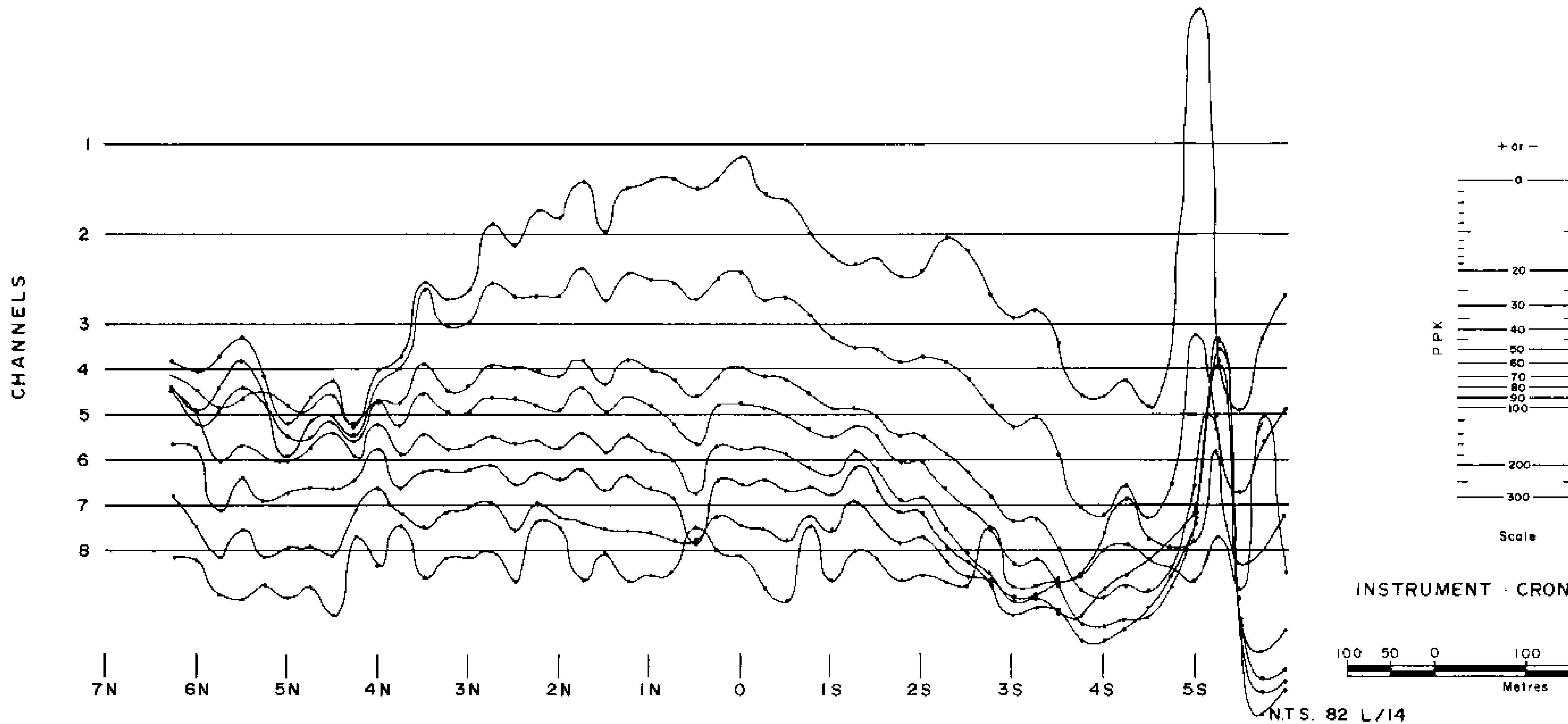

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SEPARATION 50 METRES

LINE 5W

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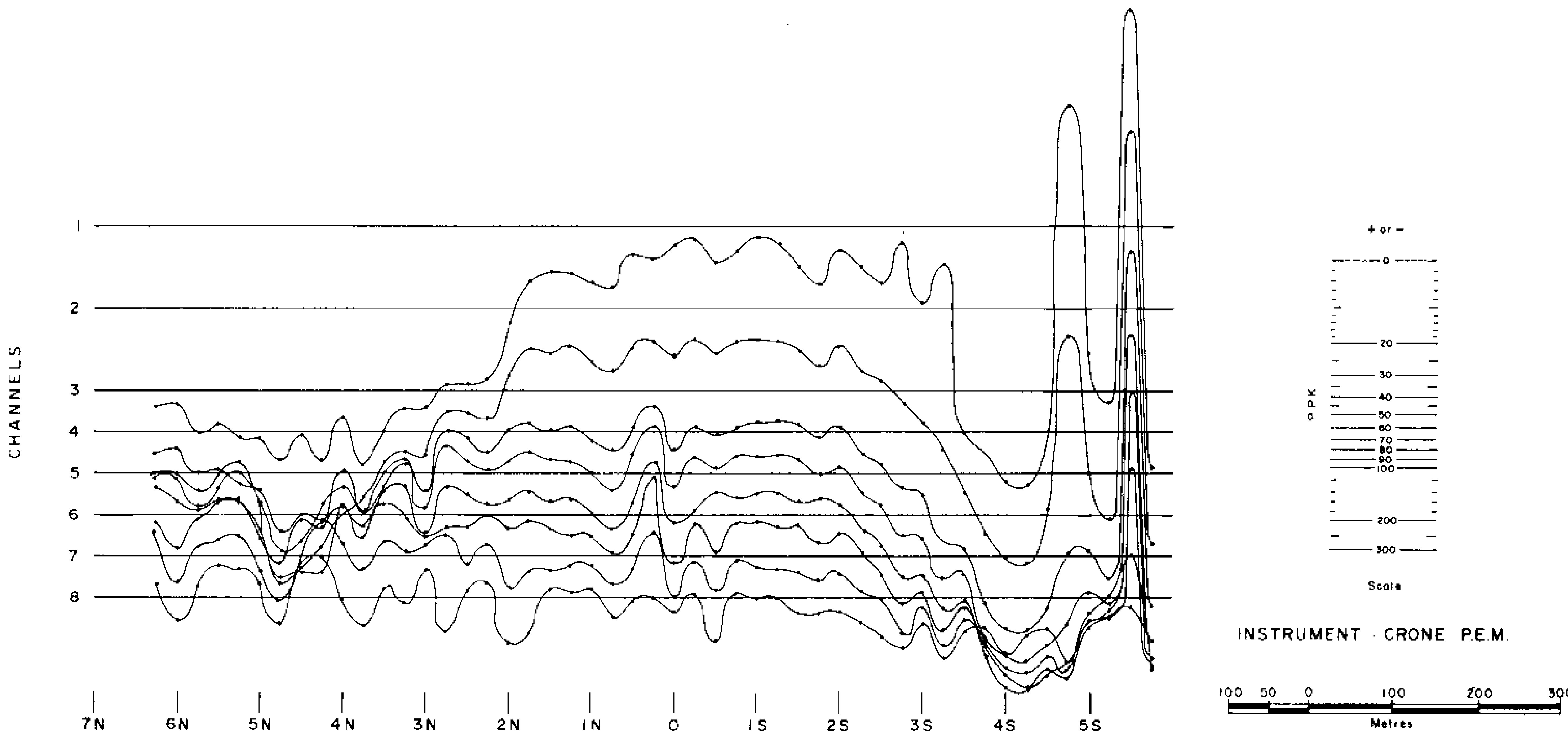

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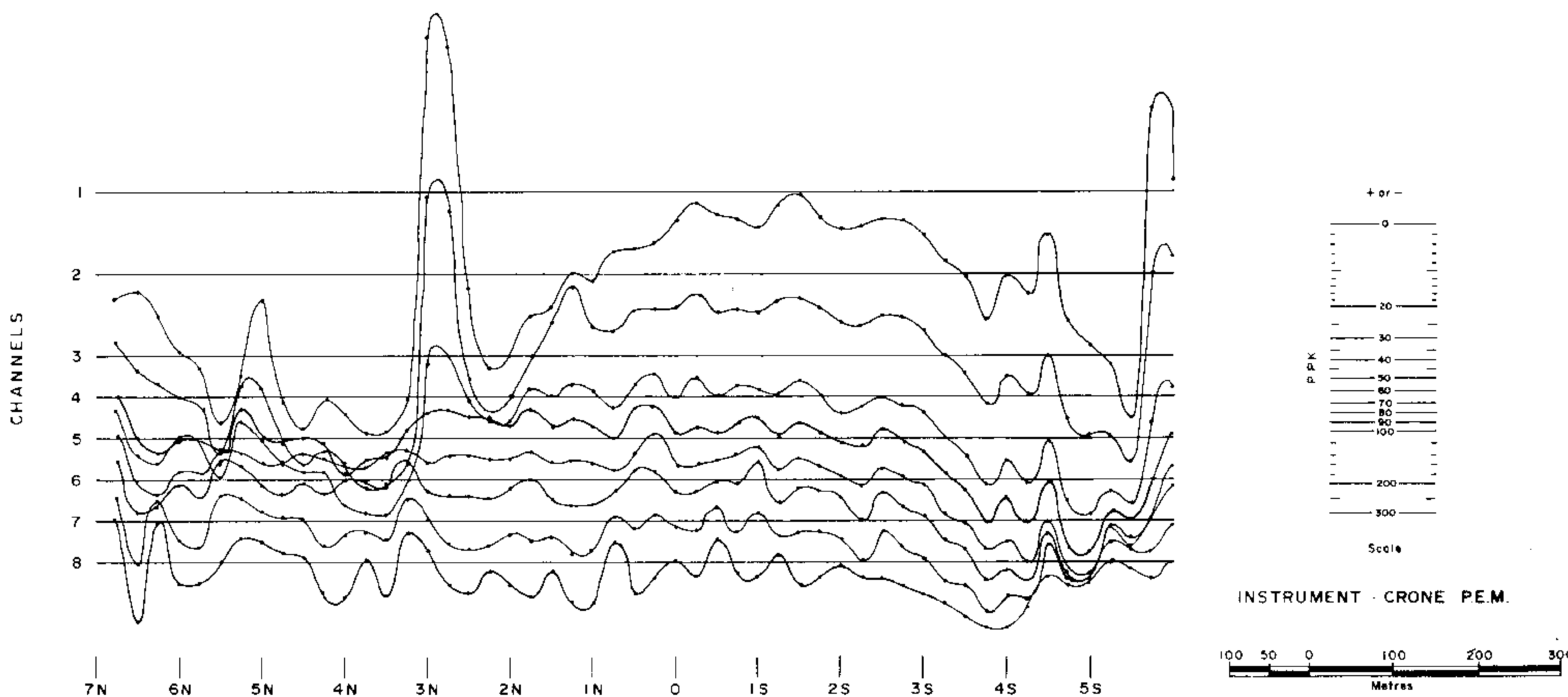

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PULSE ELECTROMAGNETOMETER
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LINE 3W

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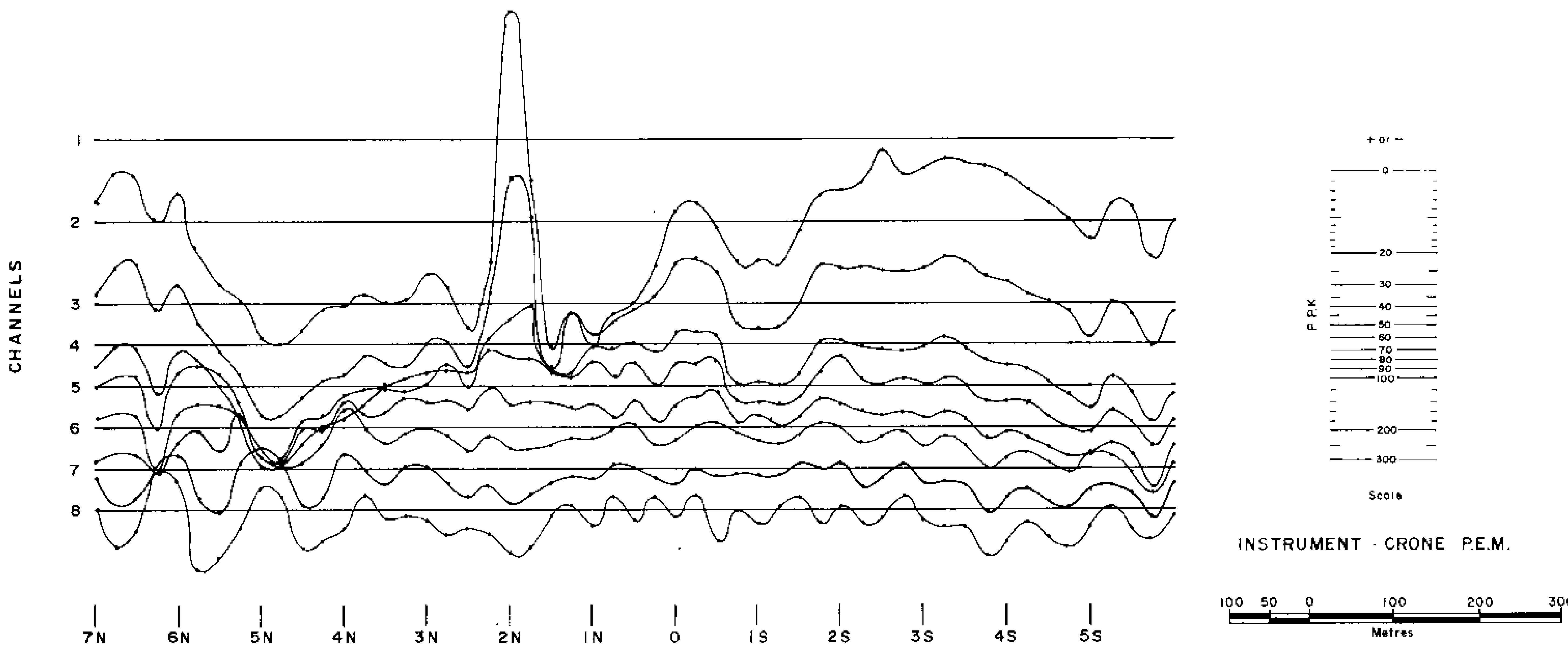

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JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 2 W

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FIG No: 11	

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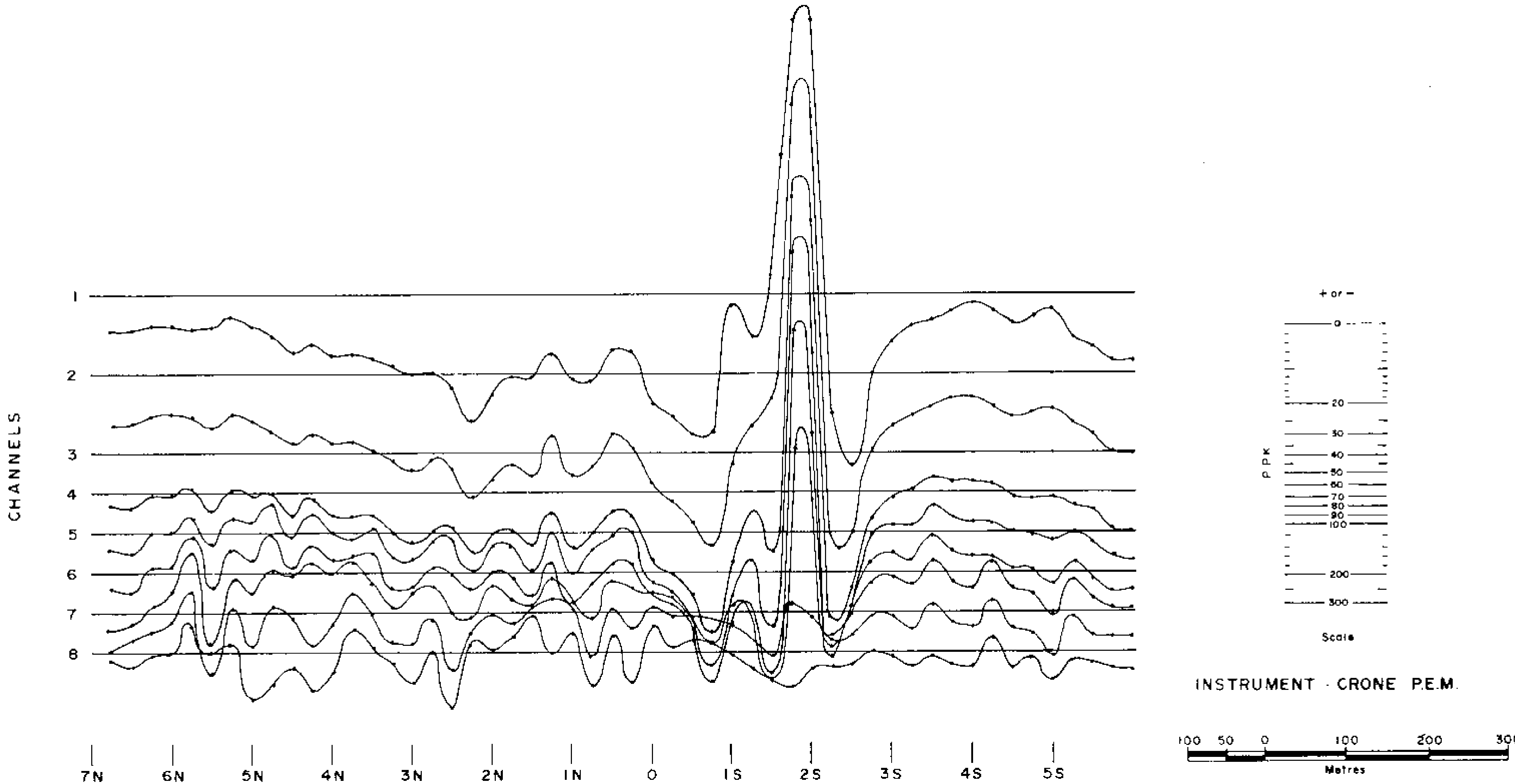
PROFESSIONAL PROVINCE OF ... GLEN E. WHITE ... BRITISH COLUMBIA ... ENGINEER



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GRANGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 1W

Glen E. White geophysical consulting & services ltd.

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DRAWN BY: T.M.	
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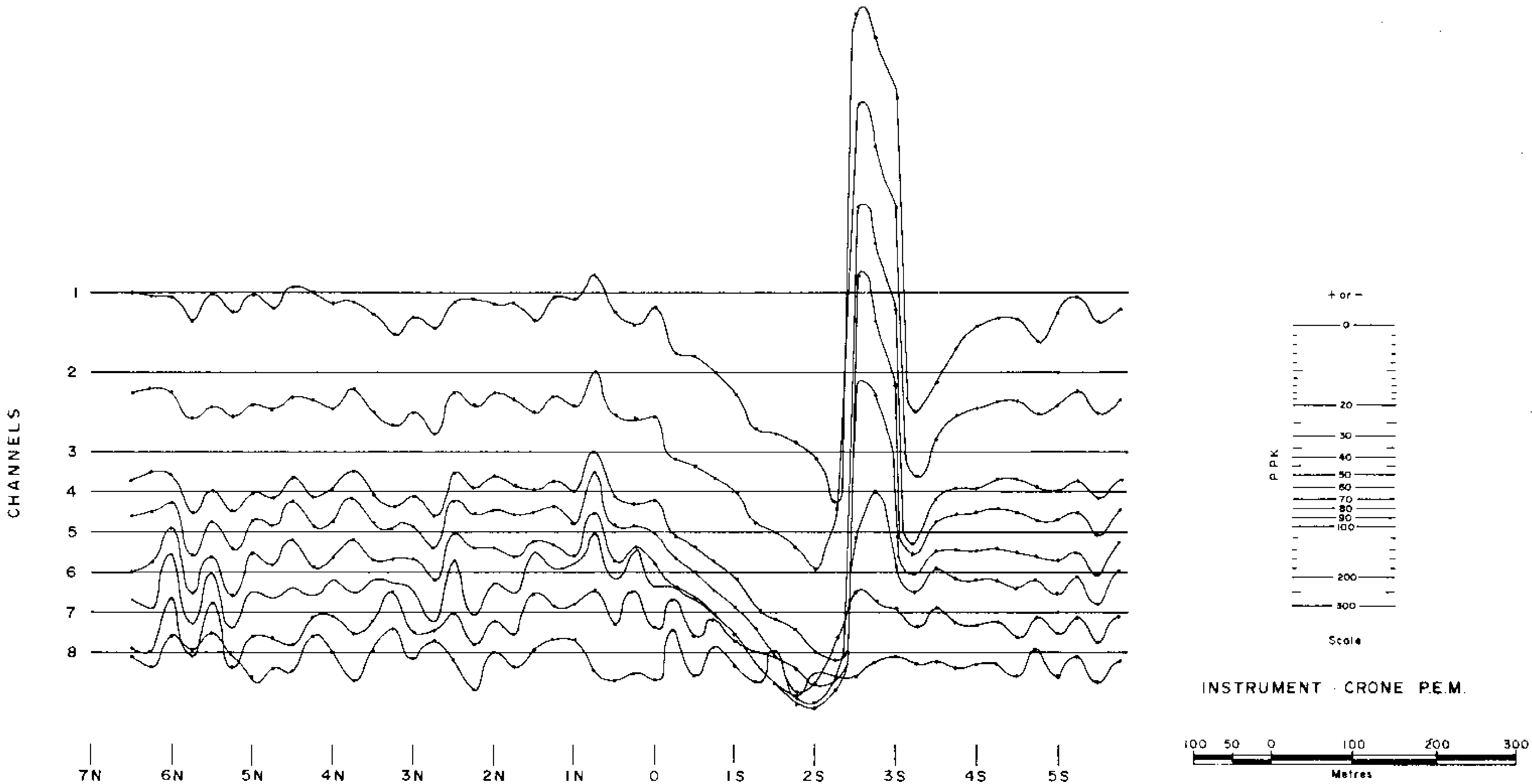
DATE: DEC. 5, 1977	
FIG. No.: 12	

To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. GEOPHYSICIST

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA GLEN E. WHITE



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 1BW

To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date . . . .
By GLEN E. WHITE B.Sc. . . . GEOPHYSICIST

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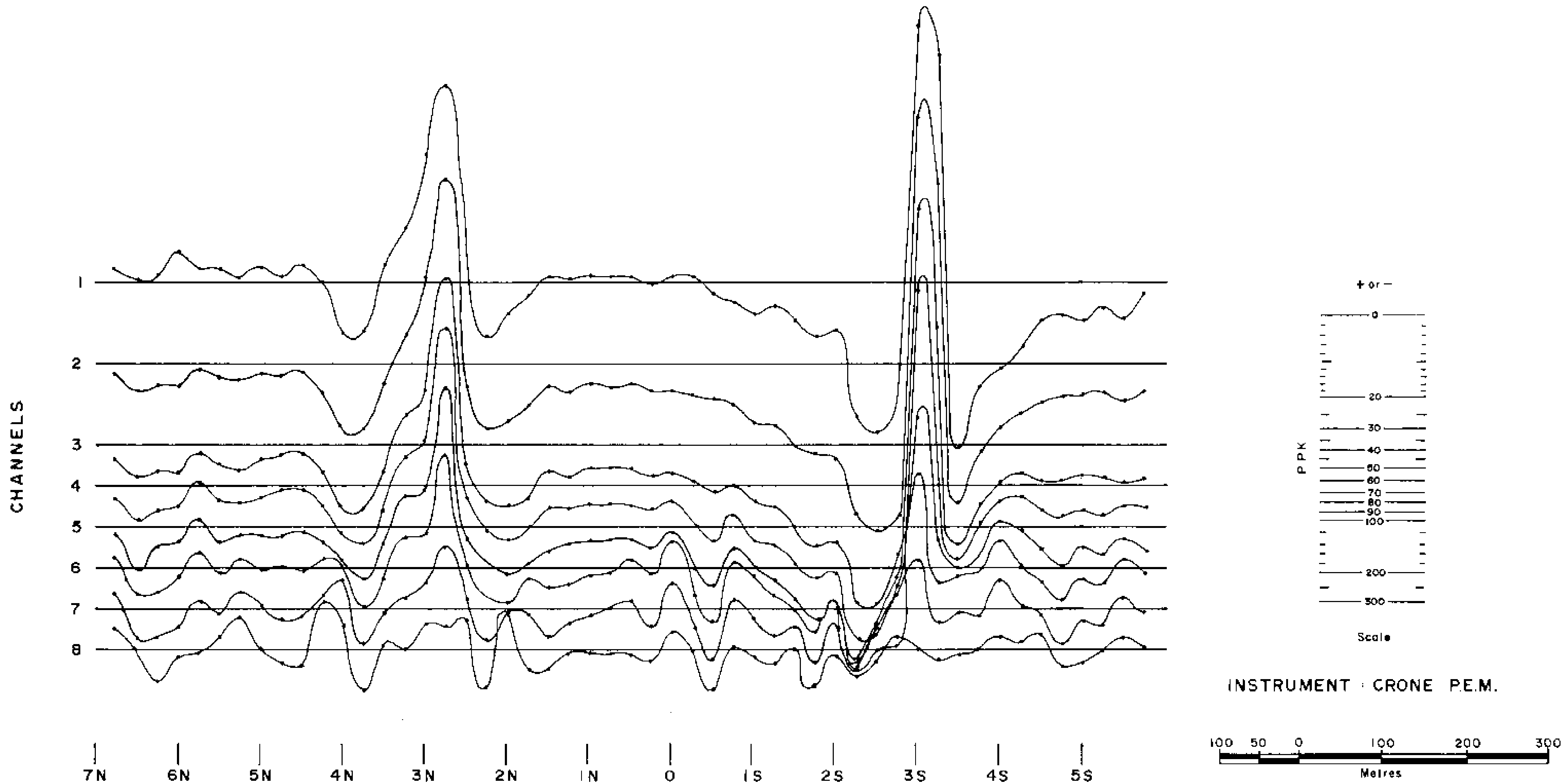
DATE: DEC. 5, 1977	
FIG No.: 13	



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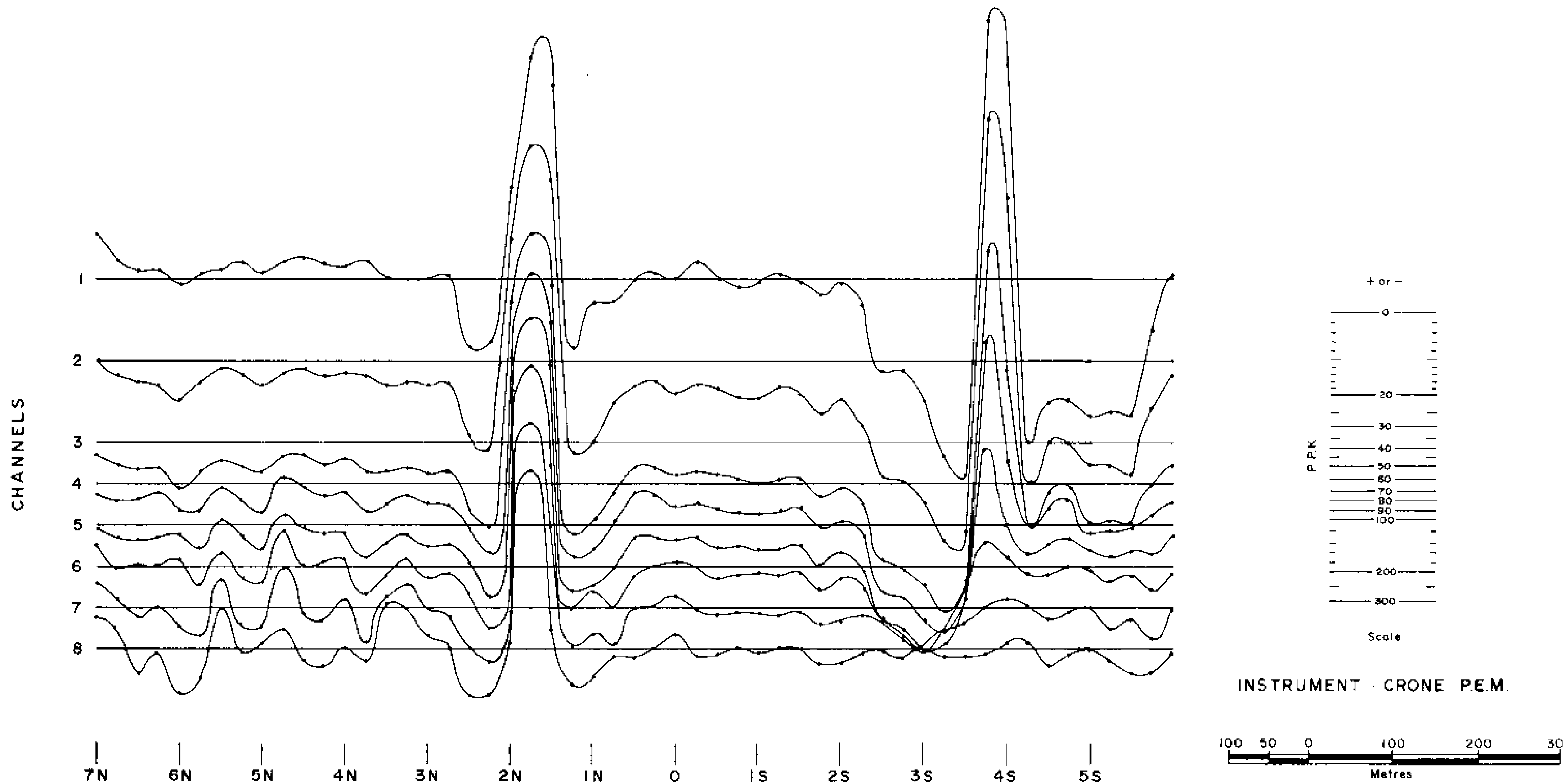
GRÄNGES EXPLORATION AB.	
JEFF & BIG 'J' CLAIMS	
KAMLOOPS MINING DIVISION - BRITISH COLUMBIA	
PULSE ELECTROMAGNETOMETER SEPARATION 50 METRES LINE 1AW	
Glen E. White geophysical consulting & services ltd.	INTERPRETED BY: G.E.W DRAWN BY: T.M. CHECKED BY: DATE: DEC. 5, 1977 FIG No: 14

To Accompany Geophysical Report Re.
THE JEFF & BIG 'J' CLAIMS
Date ....
by GLEN E WHITE B.Sc. ..... GEOPHYSICIST

PROFESSIONAL
PROVINCE
OF
GLEN E. WHITE

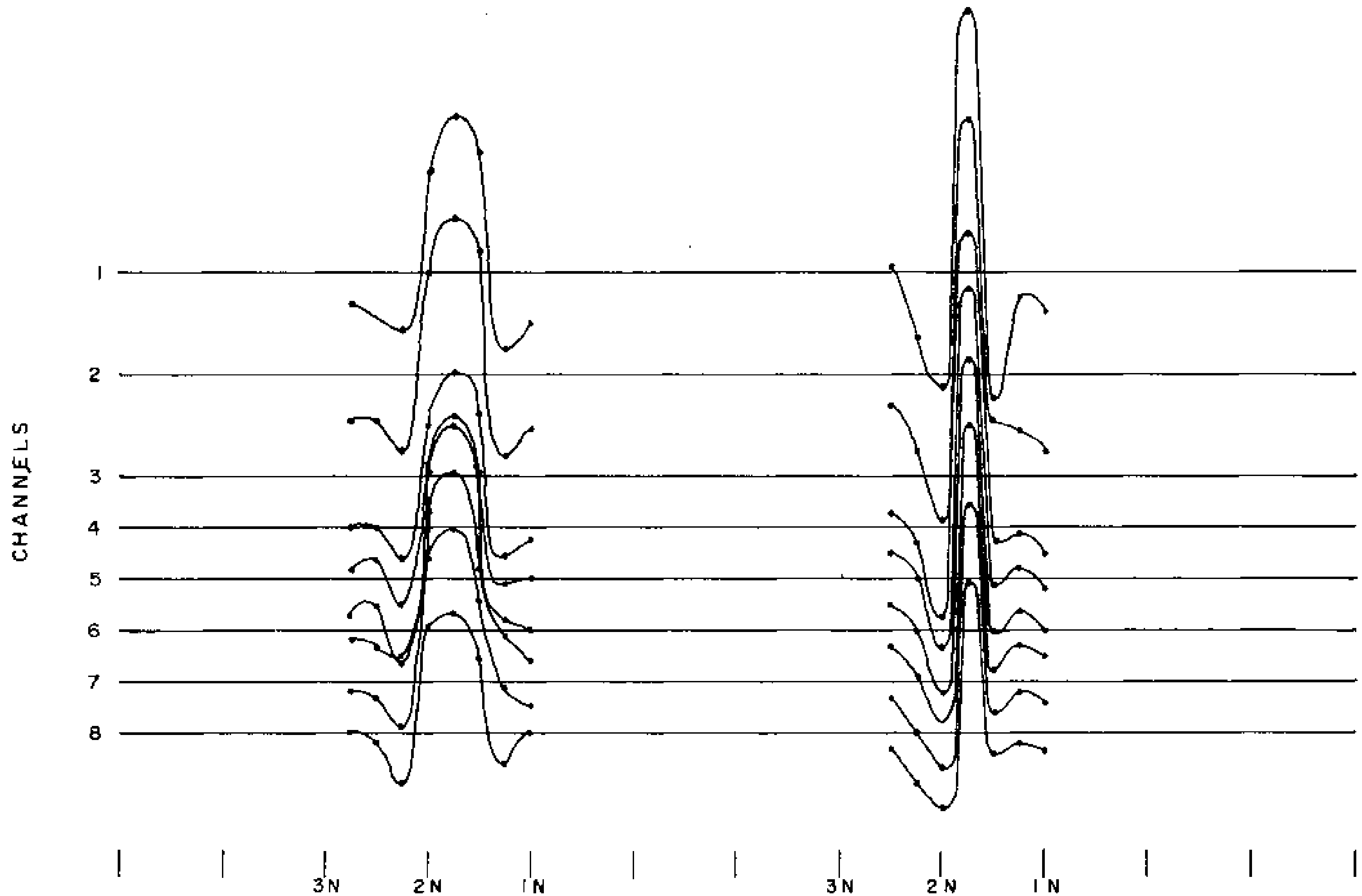


N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.	
JEFF & BIG 'J' CLAIMS	
KAMLOOPS MINING DIVISION – BRITISH COLUMBIA	
PULSE ELECTROMAGNETOMETER SEPARATION 50 METRES LINE 0+00	
Glen E. White geophysical consulting & services ltd.	INTERPRETED BY: G.E.W. DRAWN BY: T.M. CHECKED BY: DATE: DEC. 5, 1977 FIG No.: 15

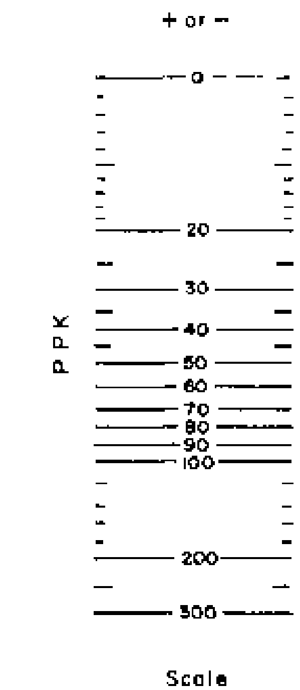
To Accompany Geophysical Report on
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. ... GEOPHYSICIST

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA GLEN E. WHITE

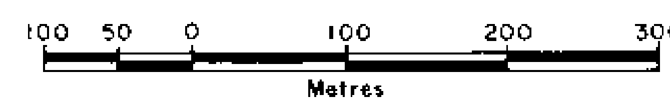


SEPARATION 75 METRES

SEPARATION 25 METRES



INSTRUMENT CRONE P.E.M.



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER

LINE 0+00 DETAIL

To Accompany Geophysical Report on
THE JEFF & BIG 'J' CLAIMS
Date ________
By GLEN E. WHITE B.Sc. ____ GEOPHYSICIST

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

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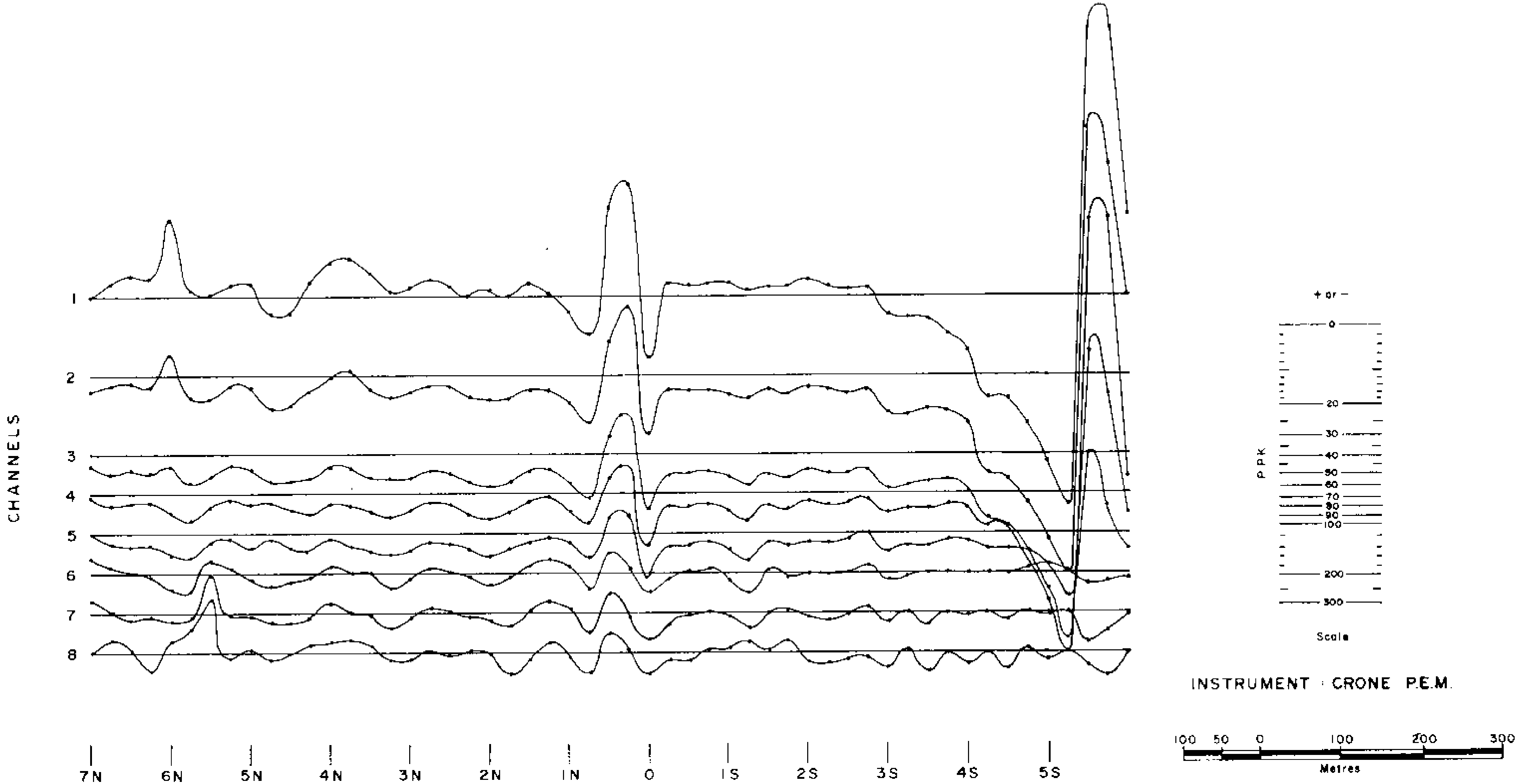
DRAWN BY: T.M.	
CHECKED BY:	
DATE: DEC. 5, 1977	
FIG No: 16	



N.T.S. 82 L/14

GRANGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 1E

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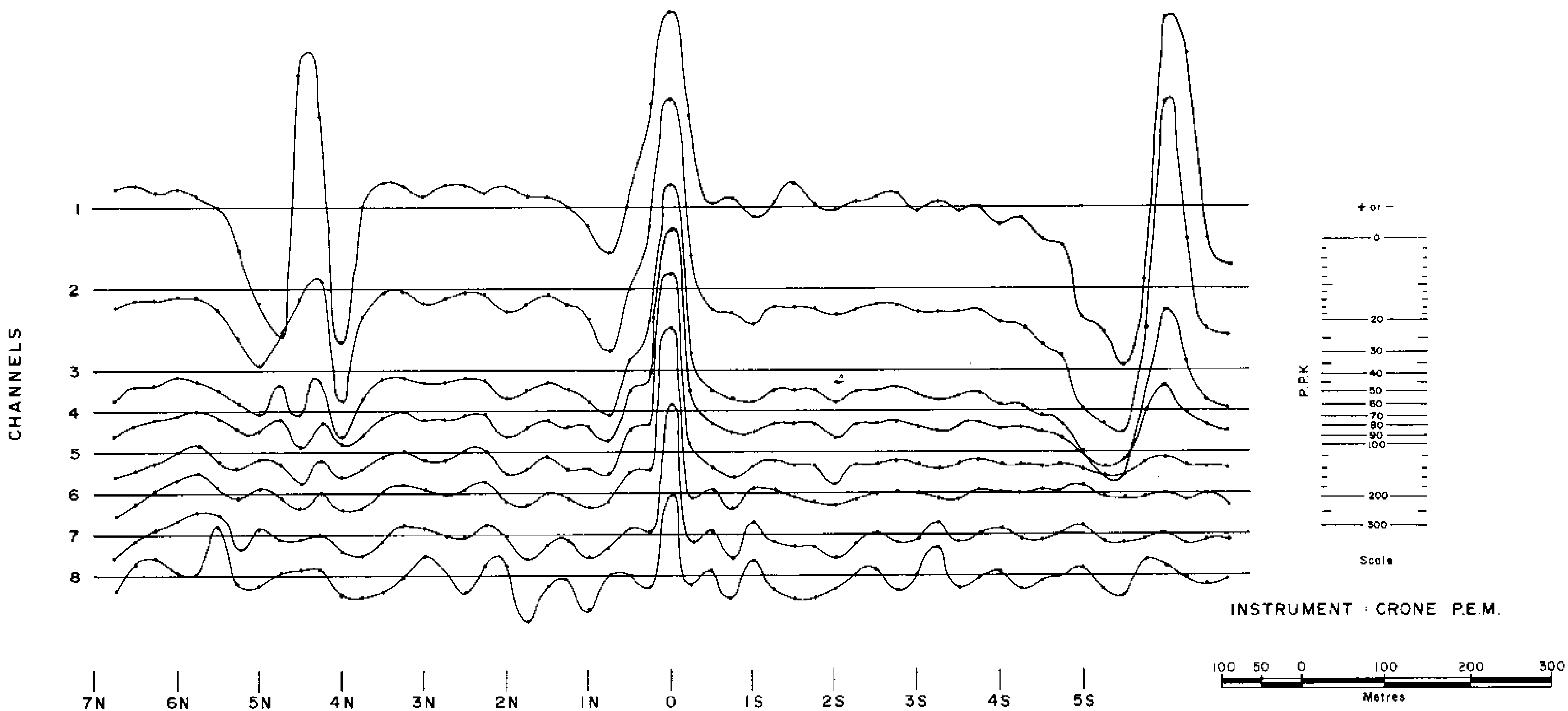
DATE : DEC. 5, 1977
FIG No. : 17

To Accompany Geophysic[al Report on]
THE JEFF & BIG 'J' CLAIMS
Date . . . .
By GLEN E. WHITE B.Sc. [...] GEOPHYSICIST

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



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 2E

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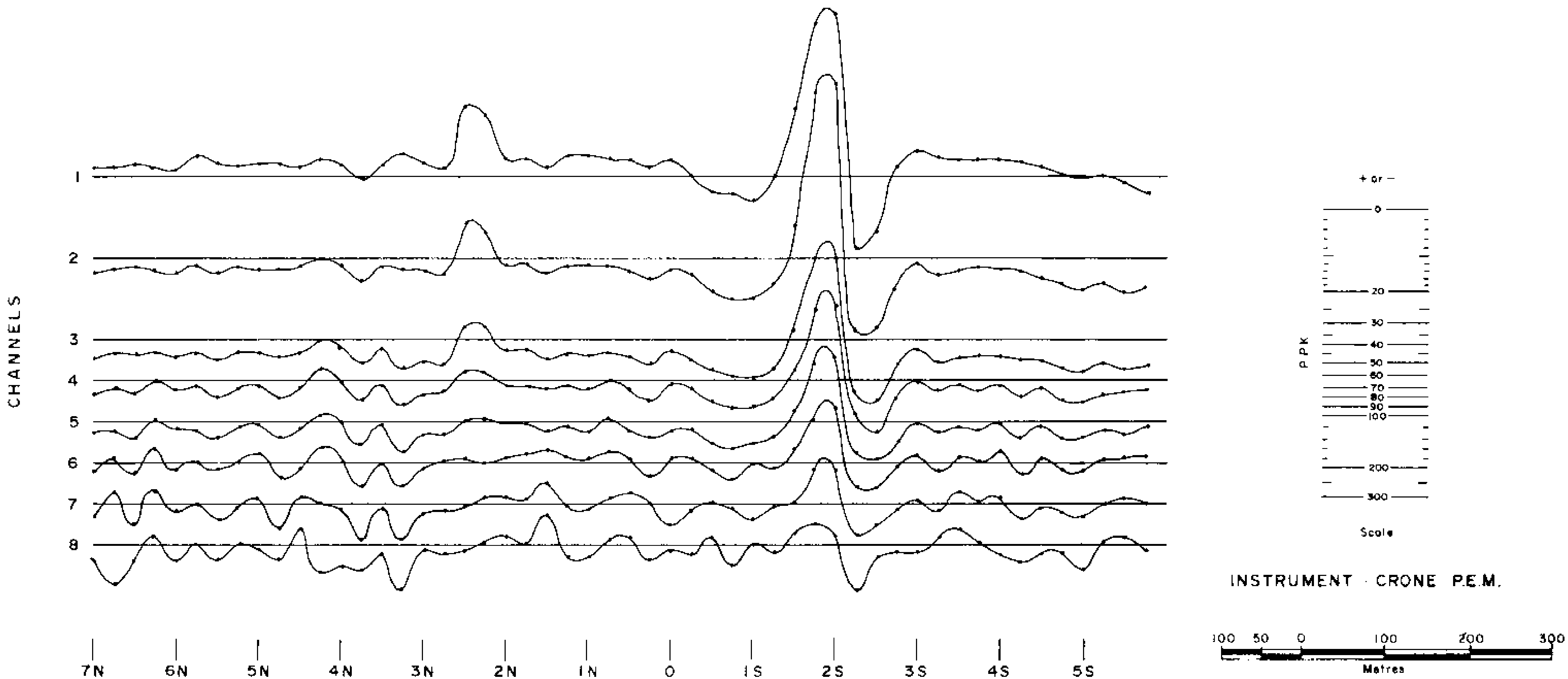
DATE : DEC. 5, 1977	
FIG No : 18	

To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E WHITE B.Sc. ... GEOPHYSICIST

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 3E

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DRAWN BY: T.M.
CHECKED BY:
DATE: DEC. 8, 1977
FIG No: 19

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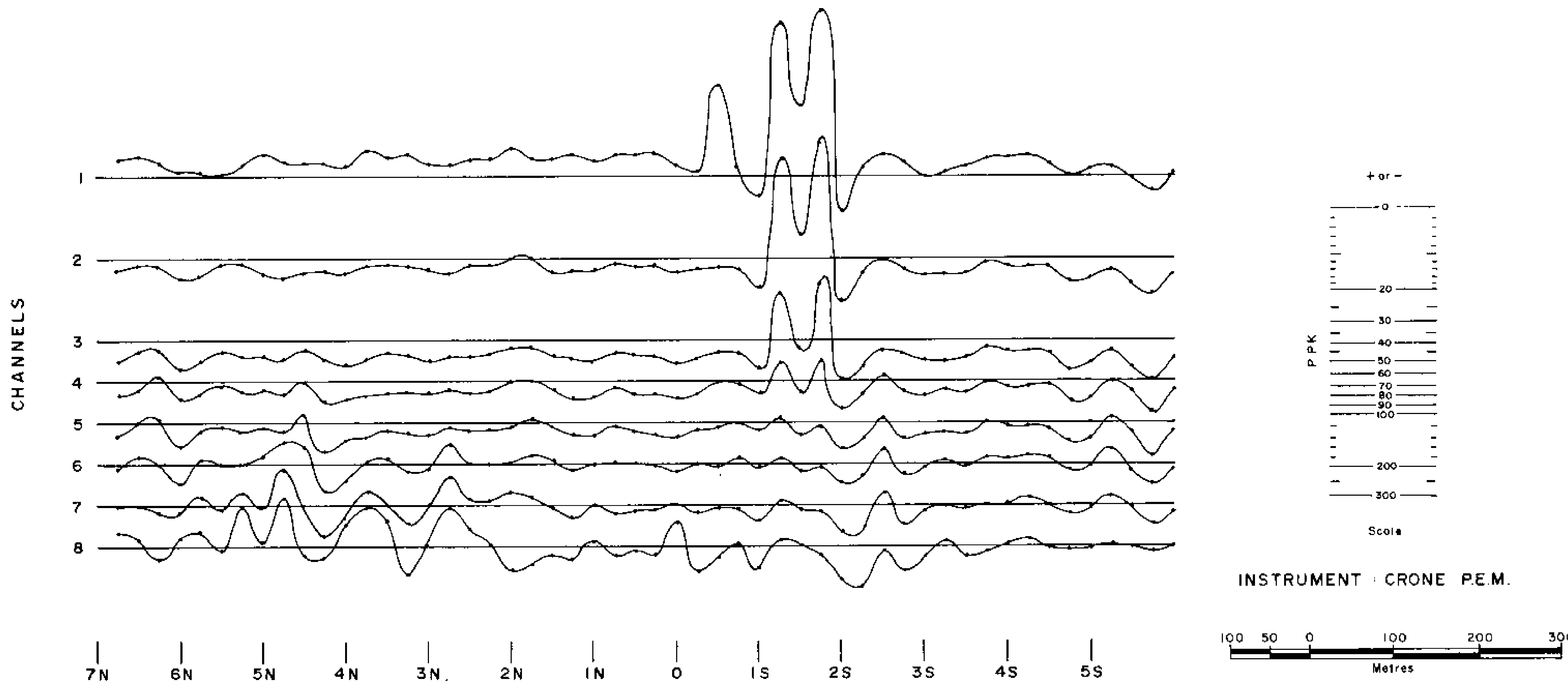
THE JEFF & BIG 'J' CLAIMS
Date . . . .
By GLEN E. WHITE B.Sc. . . . GEOPHYSICIST

PROFESSIONAL
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE
ENGINEER



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 4E

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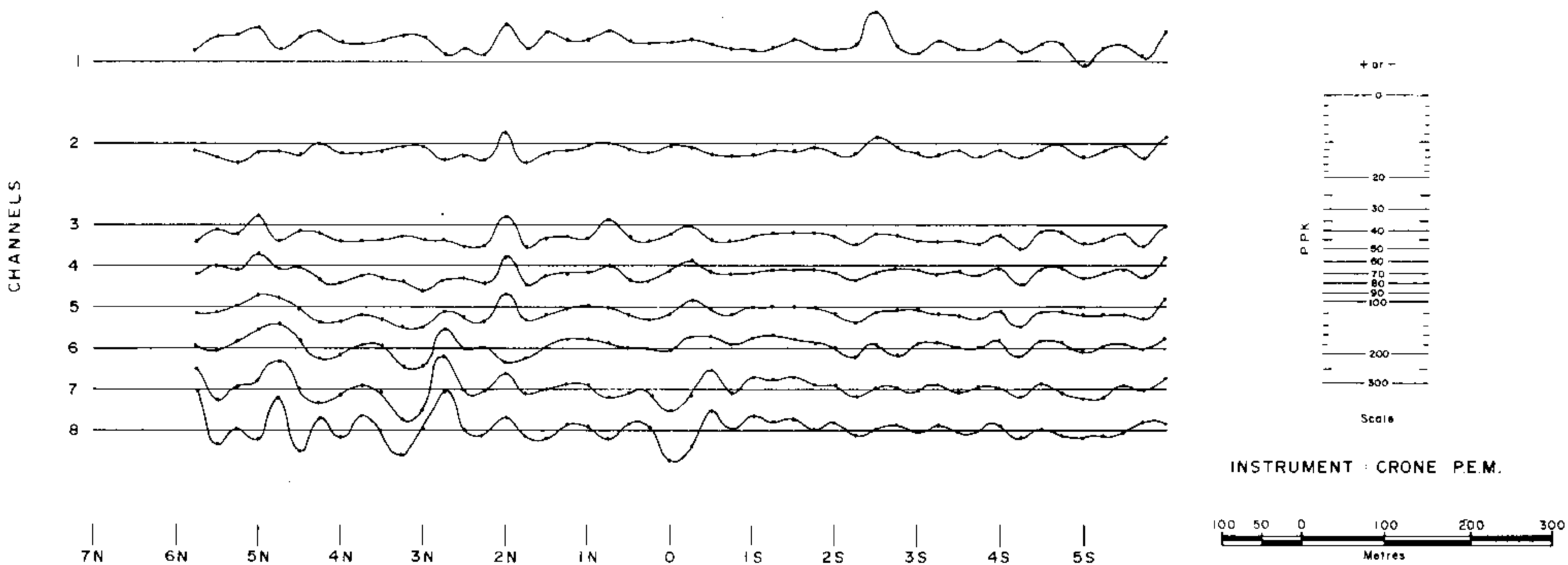
DRAWN BY : T.M.
CHECKED BY :
DATE : DEC. 5, 1977
FIG No : 20

To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date . . . .
by GLEN E. WHITE B.Sc. . . . GEOPHYSICIST

PROFESSIONAL PROVINCE OF BRITISH COLUMBIA GLEN E. WHITE



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GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

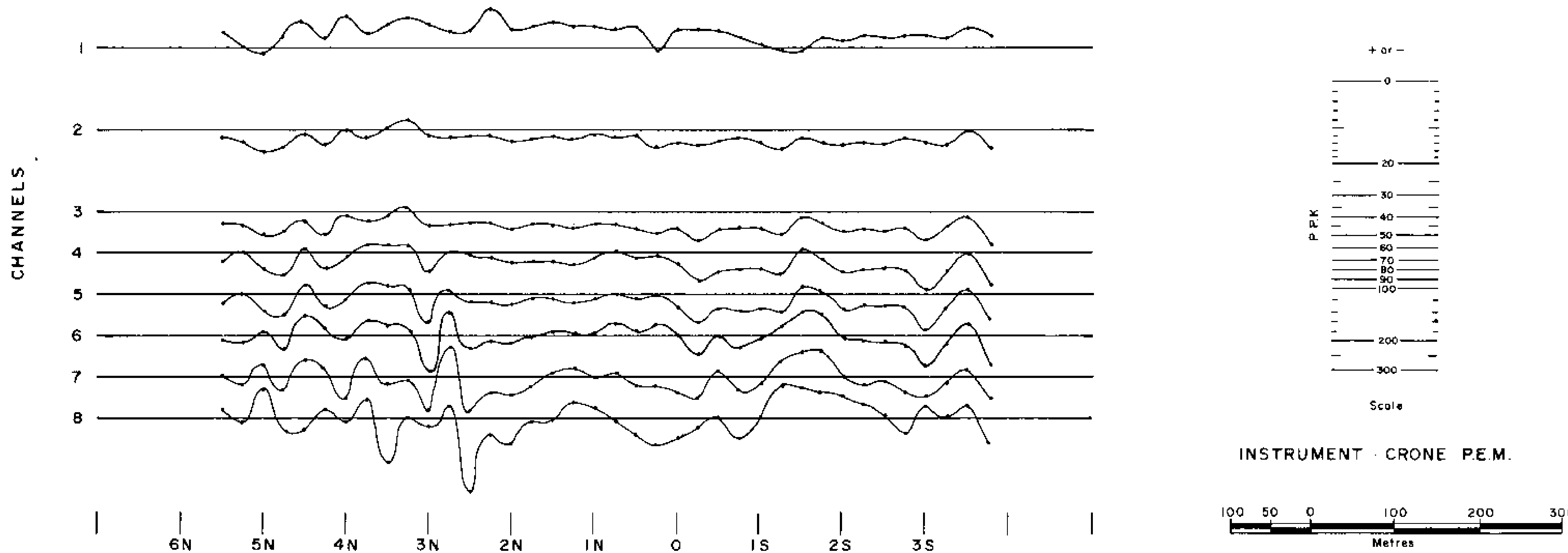
LINE 5E

To Accompany Geophysical Report on
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. GEOPHYSICIST

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

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY: G.E.W.	
DRAWN BY: T.M.	
CHECKED BY:	
DATE: DEC. 5, 1977	
FIG No.: 21	



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 6E

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DATE: DEC. 5, 1977
FIG. No.: 22

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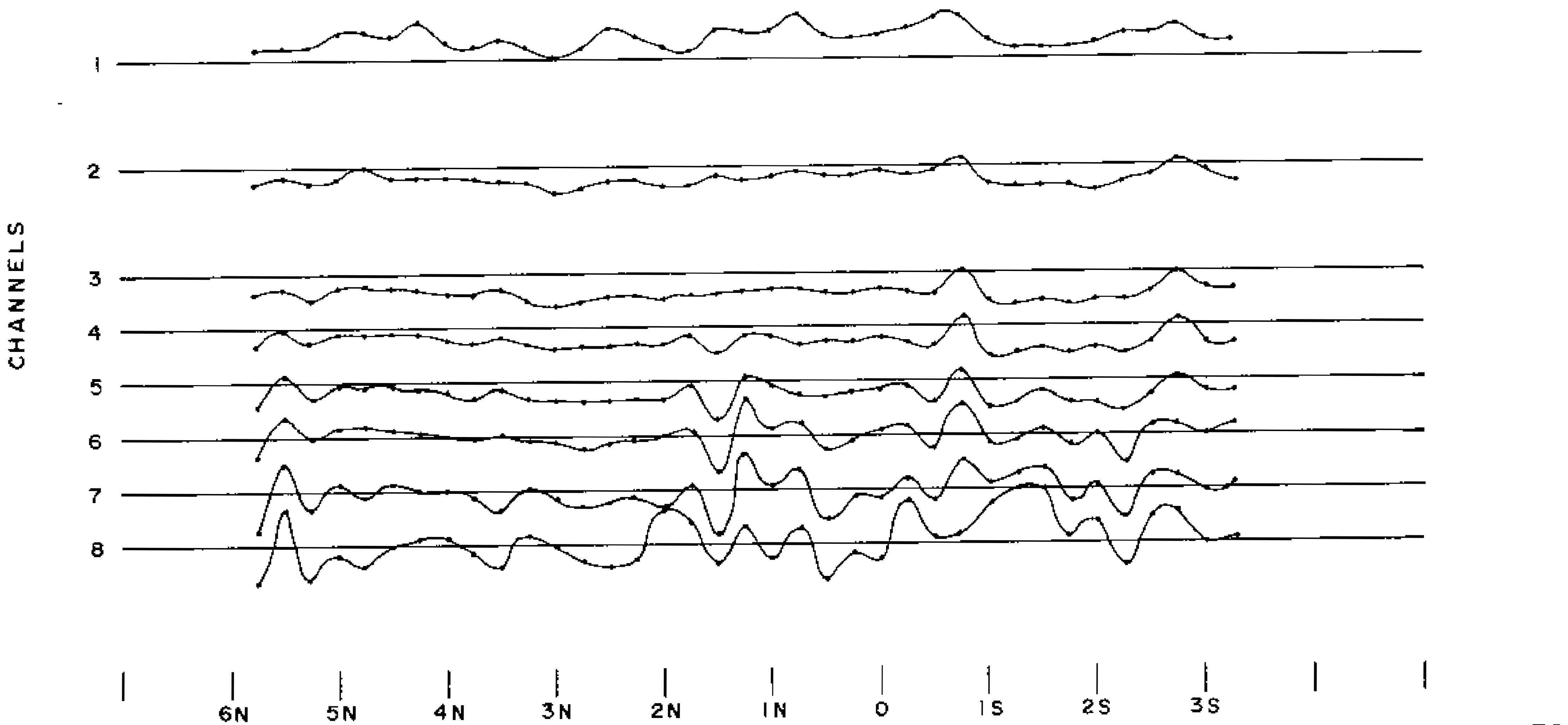
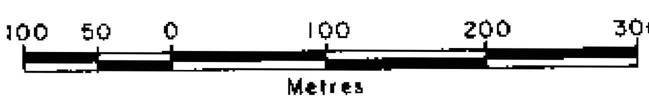
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. .... GEOPHYSICIST

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE



INSTRUMENT : CRONE P.E.M.



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 8E

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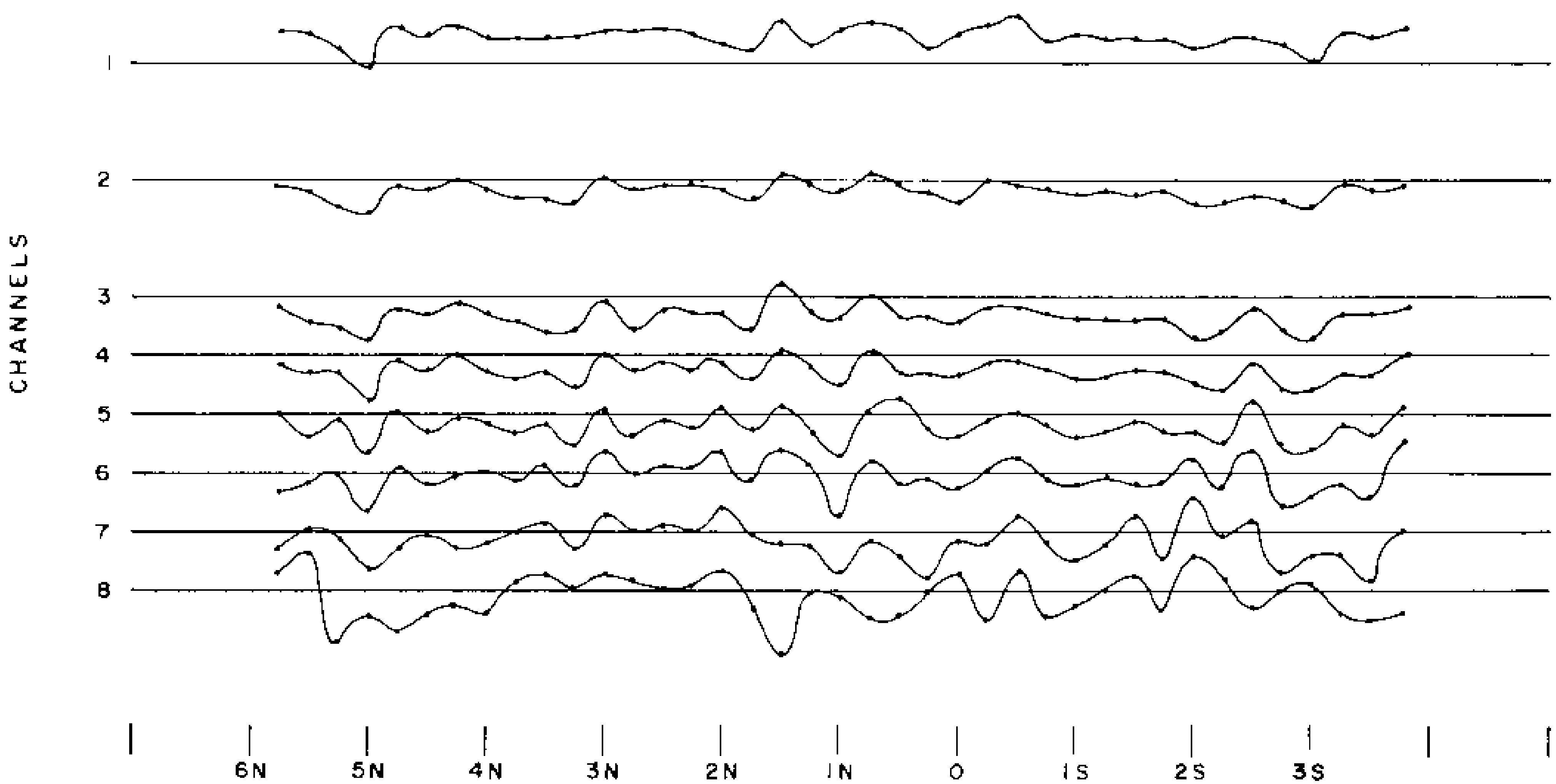
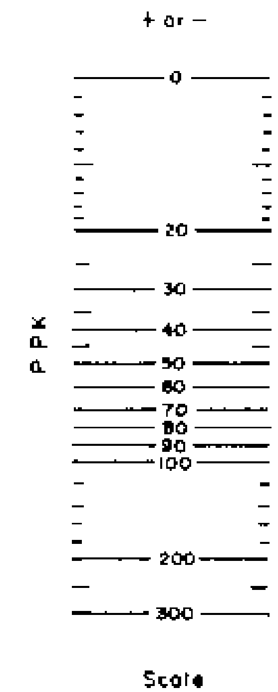
CHECKED BY :
DATE : DEC. 5, 1977
FIG No : 24

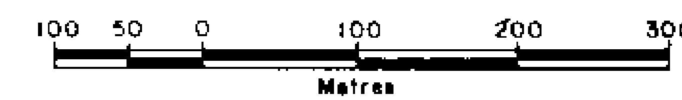
To Accompany Geophysical Report on
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. ...... GEOPHYSICIST

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA GLEN E. WHITE





INSTRUMENT : CRONE P.E.M.



N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 7E

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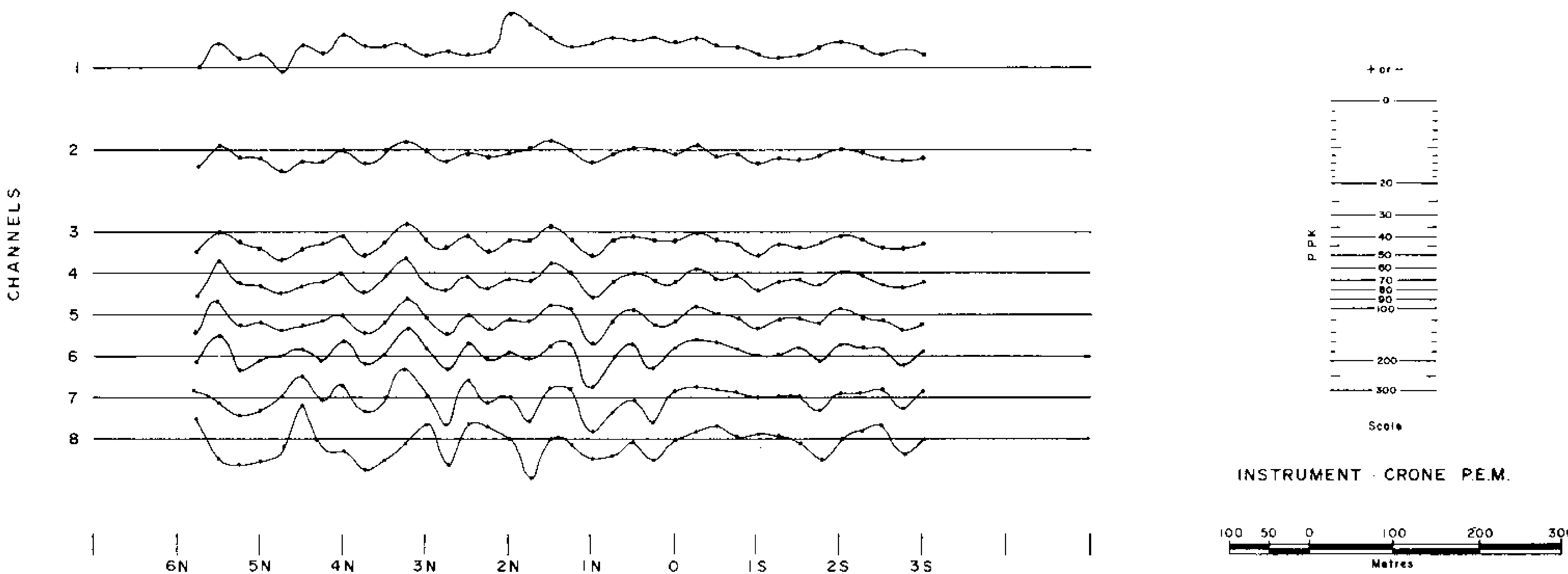
DATE : DEC. 5, 1977
FIG No. : 25

To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. ... GEOPHYSICIST

PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE
PROFESSIONAL ENGINEER



N.T.S. 82 L/14

GRANGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
SEPARATION 50 METRES

LINE 9E

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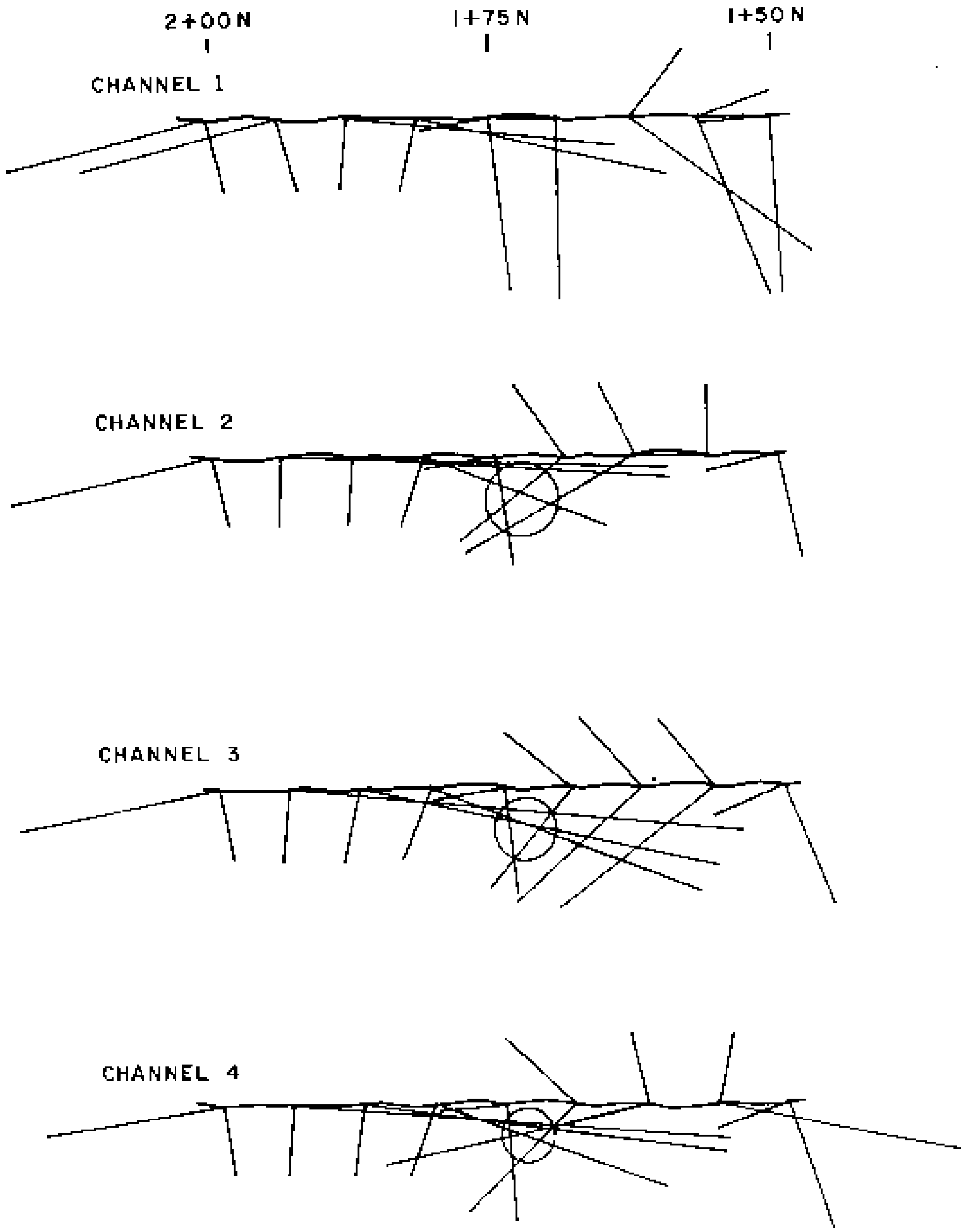
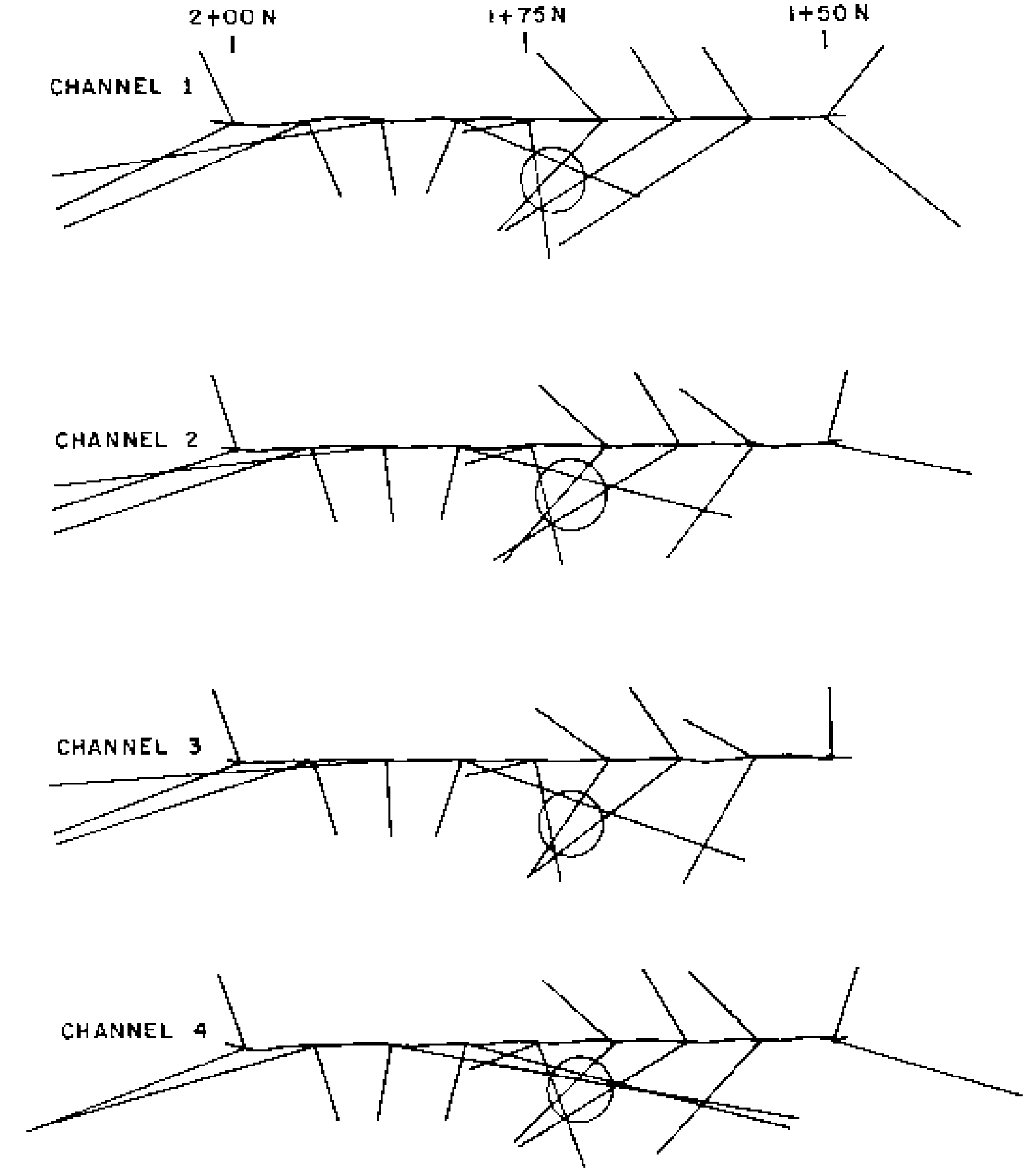
CHECKED BY:
DATE: DEC. 5, 1977
FIG No: 25

To Accompany Geophysical ... THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. ... GEOPHYSICIST

GLEN E. WHITE



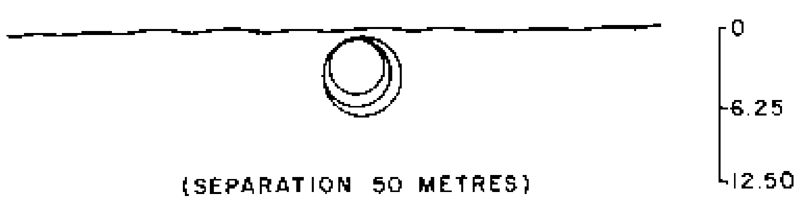
(SEPARATION 50 METRES)



(SEPARATION 75 METRES)

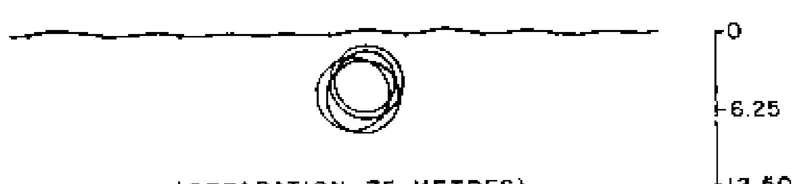
INSTRUMENT CRONE P.E.M.

COMPOSITE SECTIONS OF EDDY CURRENT POSITIONS



(SEPARATION 50 METRES)

Depth (Metres)



(SEPARATION 75 METRES)

N.T.S. 82 L/14

GRANGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
VERTICAL LOOP PROFILE
LINE 0+00

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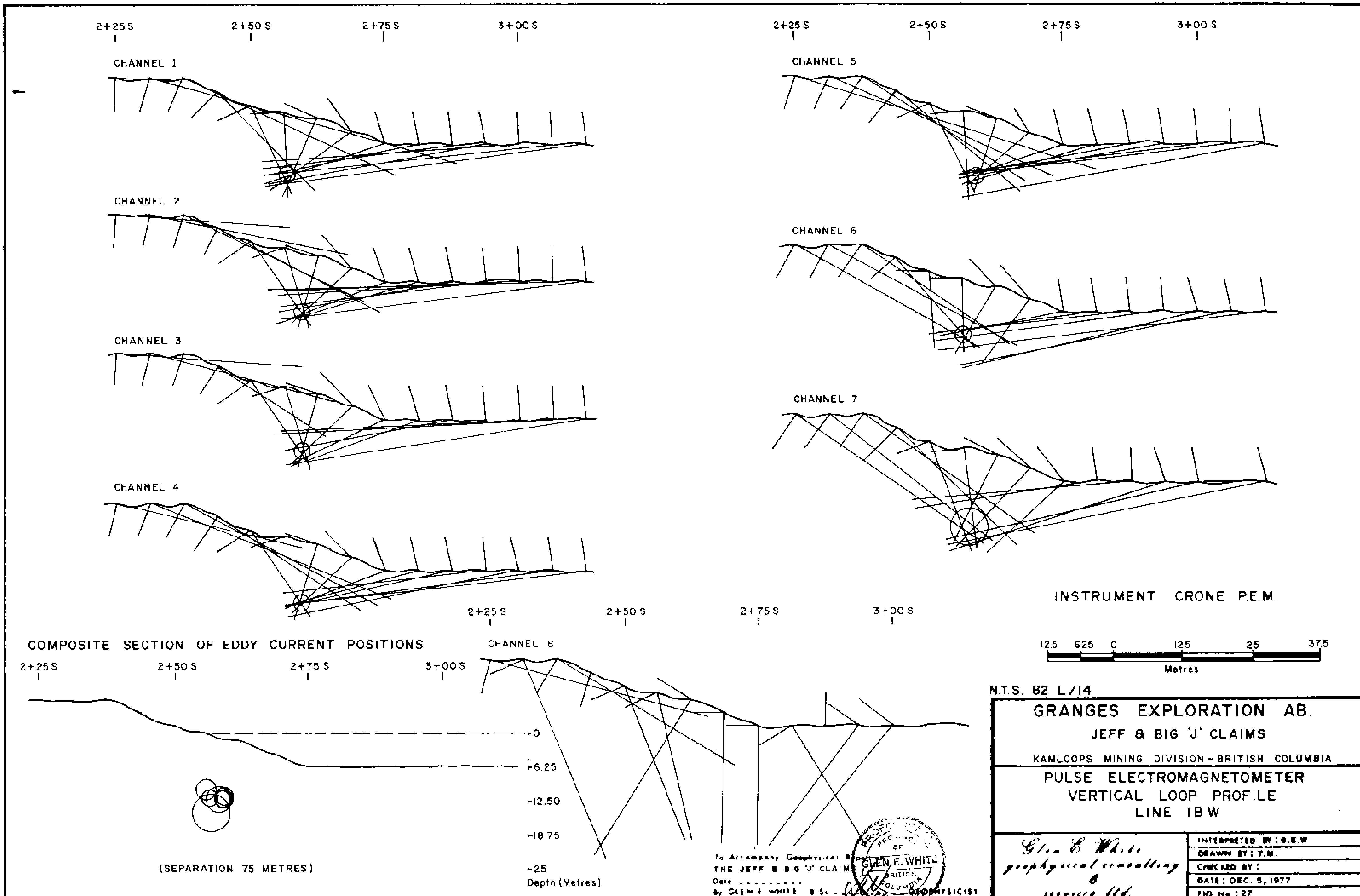
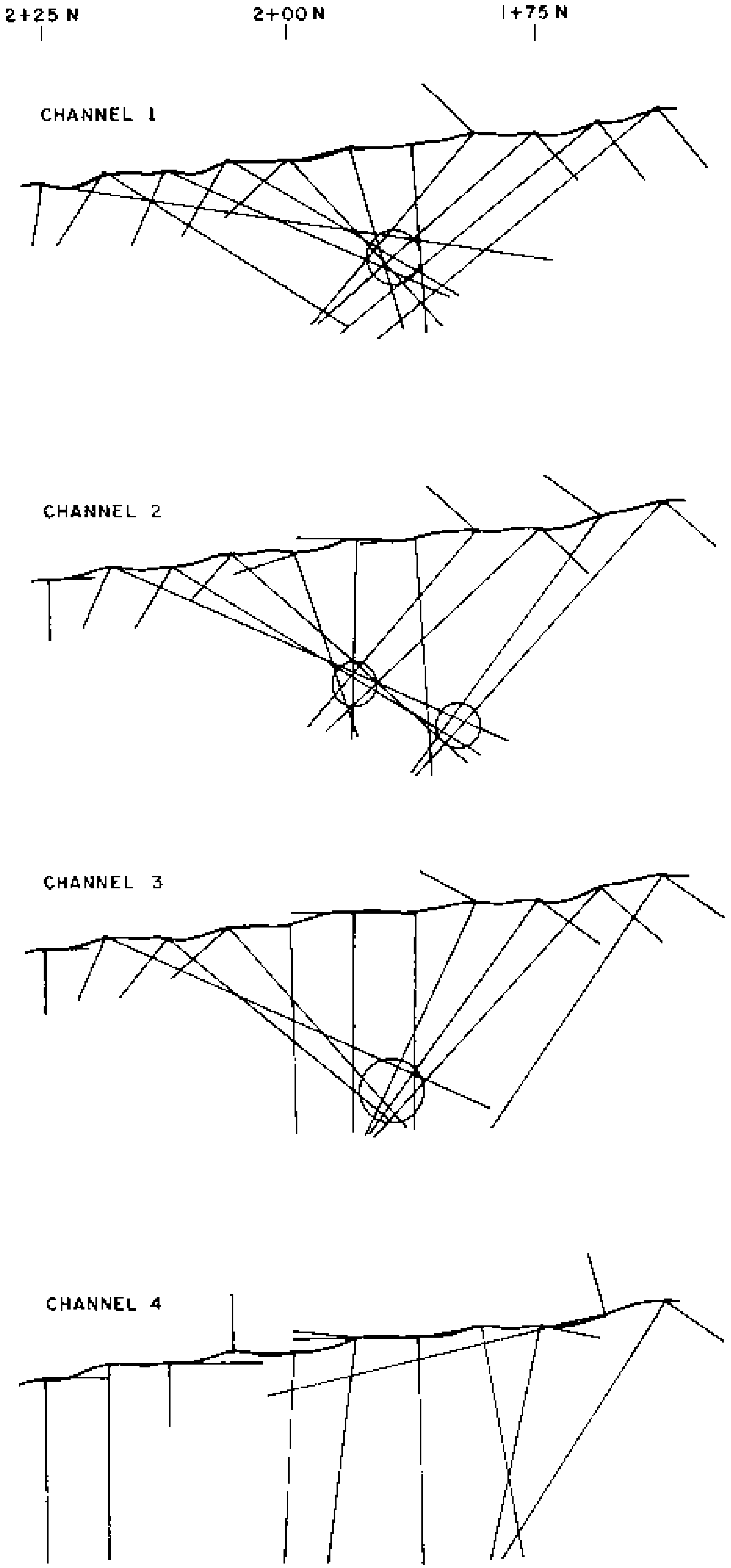
DATE: DEC. 5, 1977
FIG. No.: 26

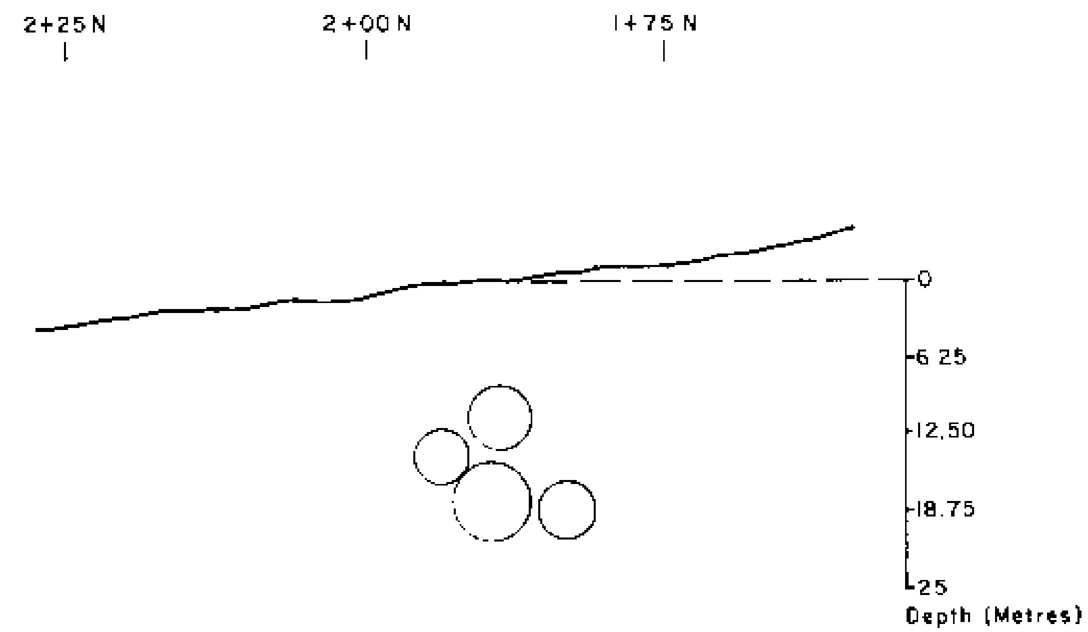
To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. GEOPHYSICIST

PROVINCE OF BRITISH COLUMBIA — GLEN E. WHITE — ENGINEER

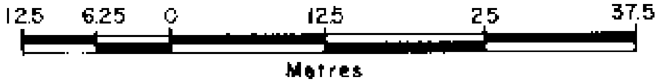

2+25 S
2+50 S
2+75 S
3+00 S
CHANNEL 1
CHANNEL 2
CHANNEL 3
CHANNEL 4
CHANNEL 5
CHANNEL 6
CHANNEL 7
CHANNEL 8
INSTRUMENT CRONE P.E.M.
COMPOSITE SECTION OF EDDY CURRENT POSITIONS
(SEPARATION 75 METRES)
0
6.25
12.50
18.75
25
Depth (Metres)
12.5 6.25 0 12.5 25 37.5
Metres
N.T.S. 82 L/14
GRANGES EXPLORATION AB.
JEFF & BIG 'J' CLAIMS
KAMLOOPS MINING DIVISION - BRITISH COLUMBIA
PULSE ELECTROMAGNETOMETER
VERTICAL LOOP PROFILE
LINE IBW
Glen E. White geophysical consulting & services ltd.
INTERPRETED BY : G.E.W
DRAWN BY : T.M.
CHECKED BY :
DATE : DEC. 5, 1977
FIG No : 27
To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date
by GLEN E. WHITE B.Sc. GEOPHYSICIST
GLEN E. WHITE
BRITISH COLUMBIA



COMPOSITE SECTION OF EDDY CURRENT POSITIONS
(SEPARATION 75 METRES)



INSTRUMENT CRONE P.E.M.



N.T.S. 82 L/14

GRANGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER
VERTICAL LOOP PROFILE
LINE 2W

To Accompany Geophysical Report
THE JEFF & BIG 'J' CLAIMS
Date ....
By GLEN E. WHITE B.Sc. ... GEOPHYSICIST

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

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services ltd.

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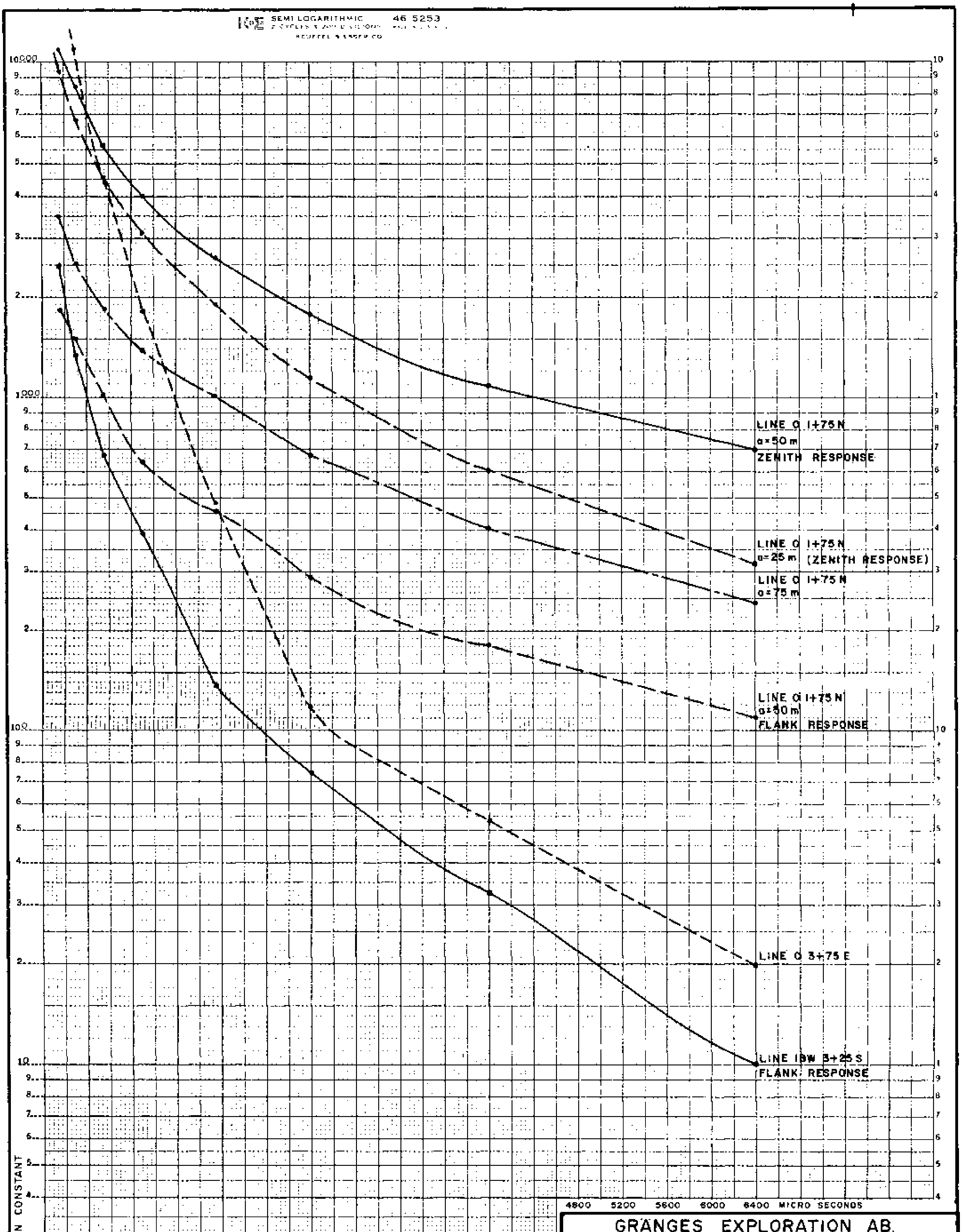
DRAWN BY: T.M.	
CHECKED BY:	
DATE: DEC 5, 1977	
FIG No: 28	



GRANGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION - BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER

— DECAY CURVE PLOT

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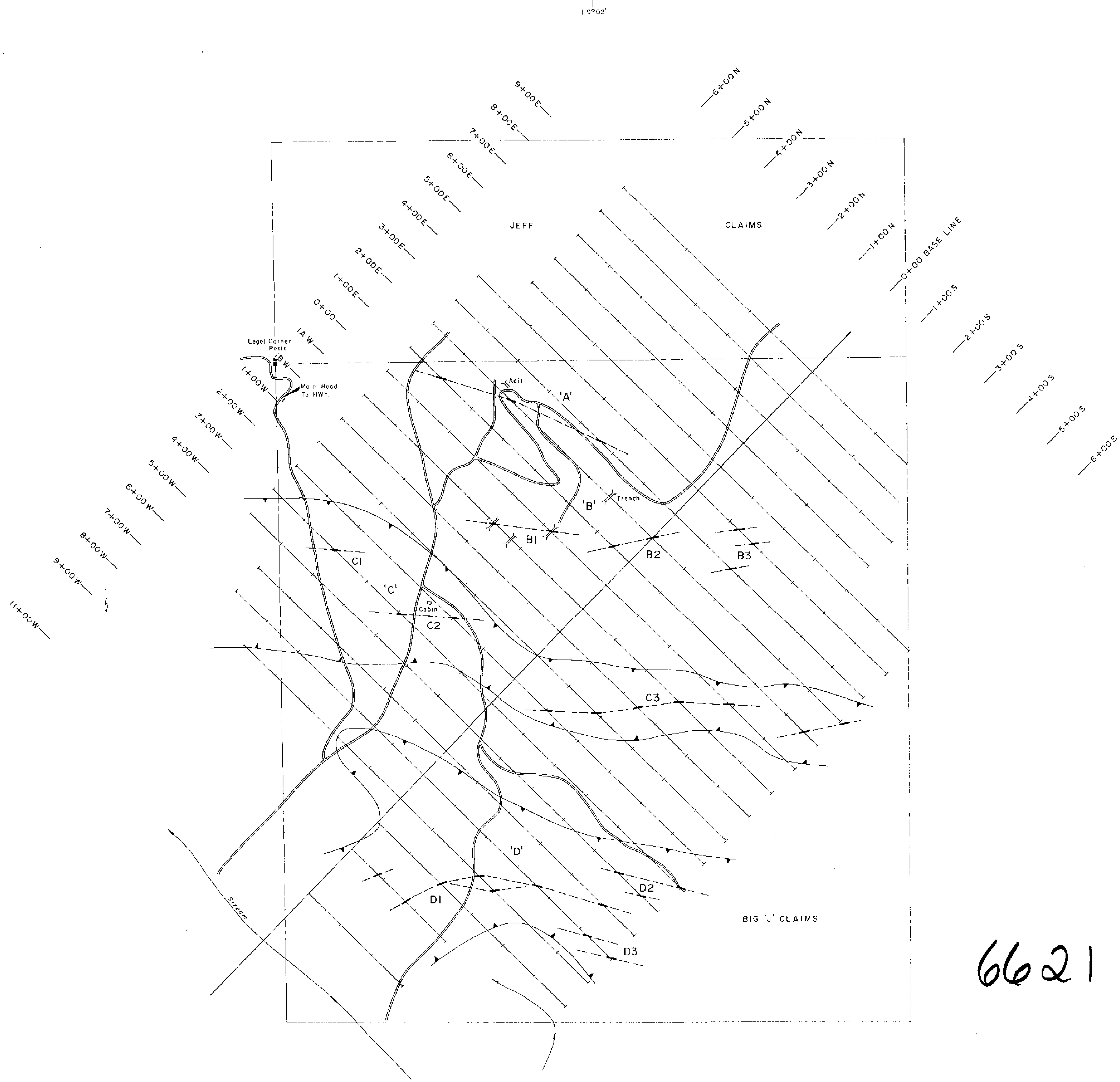
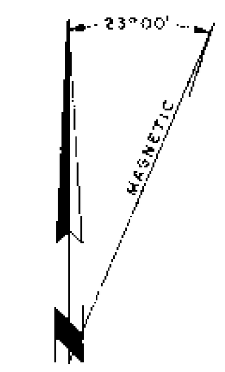
DATE: DEC.

FIG No.: 29

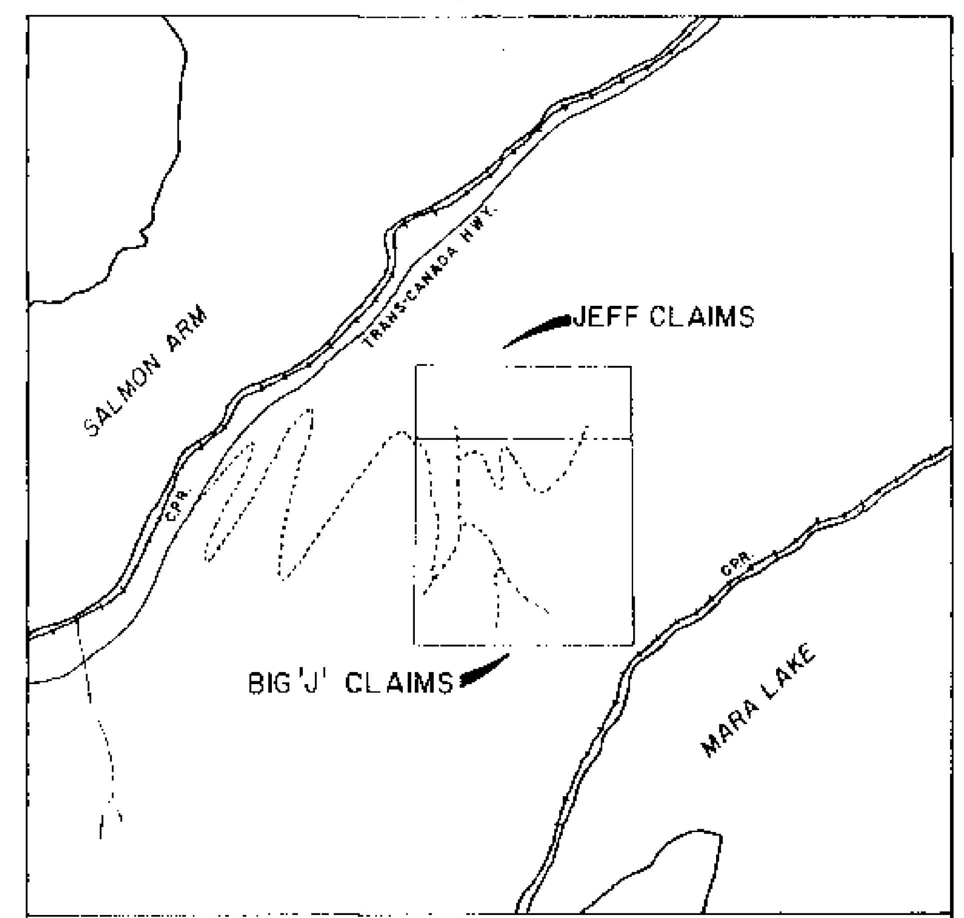
GLEN E. WHITE





LEGEND

Contour Line, Contour Interval
Stations
Outline of Claims
Claim Posts
Unpaved Roads



LOCATION MAP

SCALE : 1cm = 500m APPROX.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6621
MAP NO.

6621

INSTRUMENT : CRONE P.E.M.

100 50 0 100 200 300
Metres

N.T.S. 82 L/14

GRÄNGES EXPLORATION AB.

JEFF & BIG 'J' CLAIMS

KAMLOOPS MINING DIVISION – BRITISH COLUMBIA

PULSE ELECTROMAGNETOMETER SURVEY

— CONDUCTOR INTERPRETATION MAP —

(SEPARATION 50 METRES)

To Accompany Geophysical Report on
THE JEFF & BIG 'J' CLAIMS
Date Dec. 28/77
By GLEN E. WHITE - B.Sc. GEOPHYSICIST

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INTERPRETED BY : G.E.W.	
DRAWN BY : T.M.	
CHECKED BY :	
DATE : DEC. 5, 1977	
FIG No : 2	