

326

REPORT COVERING
GEOCHEMICAL & GEOPHYSICAL SURVEYS
ON
"A" GROUP, SALMO AREA, 49° 117° S.E.
BY
J.A.C.KEEFE & J.W.MacLeod
FOR
MCINTYRE PORCUPINE MINES LTD.

TABLE OF CONTENTSPART A

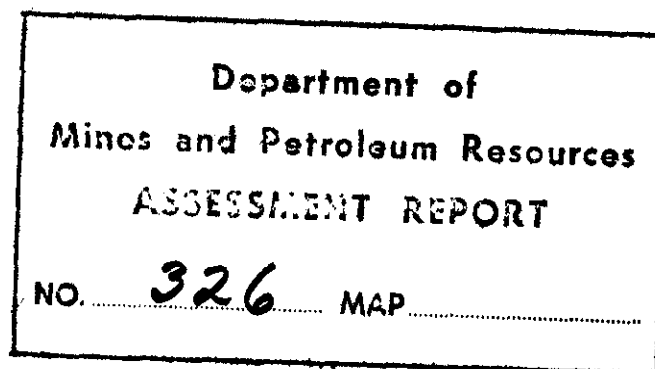
INTRODUCTION -----	Page 1
PROPERTY -----	Page 1
CONCLUSIONS & RECOMMENDATIONS ---	Page 1
OBJECT OF INVESTIGATION -----	Page 2
GENERAL -----	Page 2
GEOLOGY -----	Page 3
MINERAL OCCURRENCES -----	Page 4
GEOCHEMISTRY -----	Page 4
GEOPHYSICAL SURVEYS -----	Page 5
COSTS -----	Page 6

PART B

(see separate table of contents)

MAPS

No.1 - Location map -----	Scale: 1" = 125 mi.
No.2 - General Geology -----	Scale: 1" = 2000'
No.3 - Plan of A Group -----	Scale: 1" = 200'
No.4 - Mag. Contour -----	Scale: 1" = 200'
No.5 - Mag. Profile -----	Scale: 1" = 200'
No.6 - H.E.M. - 200' Cable -----	Scale: 1" = 200'



REPORT ON
 "A" GROUP
 SHENANGO CANYON, SALMO AREA, B.C.
 NELSON MINING DIVISION

INTRODUCTION:

The following report covers the work carried out by McIntyre Porcupine Mines Ltd. on the A Group of mineral claims between June 6 and June 15, 1960. The report has been prepared to fulfill the requirements of the mineral act governing the acceptance of geochemical and geophysical surveys for one years assessment work on these claims.

The following personnel were employed on the project:

H. Laanela - B.A., Geology, U.B.C., 1960
 J. Keefe --- M.A., Geophysics, U. of T., 1951
 J. MacLeod - B.Sc., Mining, U. of A., 1946
 O. Hicks --- 12 years field experience.

PROPERTY

<u>Claim</u>	<u>Record No.</u>	<u>Tag No.</u>	<u>Staked</u>	<u>Recorded</u>	<u>Staker</u>	<u>F.M.C.</u>
A 1 Fr.	6072	391016	Dec. 26/59	Jan. 13/60	J. MacLeod	10027
A 2 Fr.	6073	391017	"	"	"	"
A 3 Fr.	6074	391018	"	"	"	"
A 4	6075	391019	"	"	"	"

CONCLUSIONS & RECOMMENDATIONS:

The results of the work carried out to date are inconclusive due primarily to the contour of the ground which limits the area that can effectively be covered by geochemistry and the presence of the power line which eliminates for the most part the use of the Magniphase electromagnetic unit.

/ 2 /

The conditions required for the presence of ore bodies in this area are believed to be as follows:

- (a) Remac limestone
- (b) Dolomitization of this limestone
- (c) replacement type mineralization in the dolomite

In view of the high cost of the induced polarization survey recommended by Mr. Keefe a limited amount of stripping should be attempted in an effort to prove the inferred projection of the limestone and thereby establish condition (a) before proceeding with further geophysical work.

OBJECT OF INVESTIGATION:

With the view of applying geophysics and geochemistry to the overburdened areas in the Salmo lead-zinc camp, available geological data, particularly British Columbia Dept. of Mines Bulletin No. 41 by J.T. Fyles and C.G. Hewlett on the Stratigraphy and Structure of the Salmo Lead-Zinc Area, was studied. All known exposures of the favourable Reeves Member of the Laib Formation were assumed to have been investigated so an area where this limestone member could reasonably be projected under overburden was selected and staked.

GENERAL:

The A Group of claims lies mainly to the north of the Salmo River at a point known as Shenango Canyon. This canyon on the river is reached by 12 miles of paved highway south of Salmo then by 2 miles of narrow dirt road. This dirt road continues west for 16 miles to connect with the paved highway between Trail and Waneta at the power plant on the Pend D'Oreille River. The total distance to the CM&S smelter at Trail via Salmo is 42 miles and via Waneta is 29 miles.

/ 3 /

In the vicinity of the claims the north bank of the river rises sharply from elevation 1900 to 2400 where there is a bench covered by claims A 3 and A 4. Except for the rock exposure along Shenango Canyon there are only three small outcrops on the claims north of the river.

Very little timber remains on the property, the area being mostly fire ravaged and now covered by a heavy growth of brush.

The Salmo River affords an excellent water supply and a transmission line of the West Kootenay Power & Light Co. crosses the property.

GEOLOGY:

The general geology of the area is shown on accompanying map no.2 taken from B.C. Dept. of Mines Bulletin No. 41.

In conjunction with the present field program only the area to the north of the river was examined for outcrop. The exposure of Reeves limestone at Shenango Canyon strikes northeast and dips at 40° to the southeast. The surface trace of the footwall of this formation is assumed to trend northerly up the hill to the bench at elevation 2400 where it should again trend northeast (see map no. 3). Although the attitude of the bedding in the piece of limestone noted just south of line 2400N conforms to the regional trend it appears to be float.

The micaceous quartzite on the boundary between claims A3 and A4 strikes northeast and dips vertically. This quartzite is white to light brown and is probably the Nevada Member of the Quartzite Range formation.

The fault inferred along the eastern boundary of of the property is a projection of that shown on Fig. 3 Sheet B of Bulletin 41. This fault lines up with the steep side hill which terminates the outcrop on the Arnot property to the north of the A group.

MINERAL OCCURRENCES:

/ 4 /

The Rainbow showing, located in the southeast corner of claim A2 is described in detail on pages 147-149 of Bulletin 41. This deposit is typical of the replacement type found in the Reeves limestone but values encountered to date are not encouraging.

Mineralization was noted at two points on the Arnot claims. One occurrence is of minor zinc replacement in limestone and the other small lenses of pyrite and pyrrhotite in argillite. Neither instance is of sufficient size or grade to be significant.

GEOCHEMISTRY:

For ground control over the inferred position of the Reeves limestone a baseline 2400 feet long was cut bearing N 10° E from the outcrop on the road above Shenango Canyon. Crosslines were run at 400 foot intervals for 800 feet on either side of the baseline. All lines were chained and picketed at 100 foot intervals.

Over only a small portion of the area considered favourable was it practical to take soil samples. The area to the east of the baseline and south of 1600N is too steep.

Samples were taken at 50 foot intervals with a trowel. Each sample was obtained immediately below the humus which in most cases amounted to a depth of only a few inches. Samples were dried, screened, and the -80 mesh portion bagged for analysis.

All samples were run for zinc by G.S. Eldridge & Co., 633 Hornby St., Vancouver, using the procedure outlined in G.S.C. Paper 59-3, Pamphlet No.1 and the results plotted on the accompanying plan no.3

11 samples were checked by X-Ray Assay Labs Ltd., 28 Eglinton Ave. West, Toronto with the following results:

/ 5 /

<u>Sample No.</u>	<u>G.S. Eldridge</u>	<u>X-Ray Assay Labs.</u>
1	150 ppm Zn.	210 ppm Zn.
2	175	200
3	200	280
4	175	230
5	100	130
6	150	160
7	150	160
8	150	190
9	100	140
10	75	100
11	75	100

Based on the experience of other operators who have carried out geochemical surveys in this area none of the values obtained on the A group can be considered anomalous. For comparison, one survey over a known zone of mineralization indicated that values less than 500 ppm. are not significant. Although not encountered in this survey, care must be exercised in interpreting anomalies in this area since tuffa is not uncommon and this material is known to transport a heavy concentration of Zn. ions a considerable distance.

GEOPHYSICAL SURVEYS:

Details of the geophysical work carried out by company personnel are covered by Part B of this report prepared by J.A.C.Keefe.

In addition to the magnetometer and H.E.M. work the lines were surveyed by John Sirola using his Johnex equipment. Mr.Sirola indicates an anomalous area as shown on map no. 3. Due to the lack of knowledge regarding the technical operation of his machine and since there is no supporting evidence for his anomaly this survey cannot be used to evaluate the property.

COSTS:

Line Cutting & Chaining ---- June 7 -8	O.Hicks -2days @ 17.00	- 34.00
" " "	H.Laanela-	" - 34.00
Sample collection & screen - June 13-14	O.Hicks -	" - 34.00
" " "	H.Laanela-	" - 34.00
Supervision -----	J.MacLeod-2days @ 25.00	- 50.00
Report preparation -----	J. MacLeod-3days @ 25.00	- 75.00
G.S.Eldridge & Co. - 53 soil samples @ 1.00	-----	53.00
X-Ray Assay Labs. Ltd. 11 soil samples @ 0.75	-----	8.25
		<u>322.25</u>
Geophysical Labour - see part B page 1 for details	-----	288.00
Total costs applicable for assessment work	-----	<u>610.25</u>

Respectfully submitted,



J.W.MacLeod, P.Eng.

Vancouver, B.C.
December 13, 1960.

GEOPHYSICAL REPORT FOR ASSESSMENT CREDIT

McINTYRE PORCUPINE MINES, LIMITED

SHENANGO CANYON "A" CLAIM GROUP

FOUR CLAIMS

SITUATED APPROXIMATELY TWELVE MILES SOUTH OF SALMO, B. C.

BY J. A. C. KEEFE, P. ENG.

CLAIMS HELD BY J. W. MacLEOD

GEOPHYSICAL WORK CARRIED OUT BETWEEN

JUNE 9 AND 12, 1960

TABLE OF CONTENTS

	<u>Page</u>
Personnel Employed	1
Cost of Geophysical Labour	1
Electromagnetic Survey	1
Magnetic Survey	1
Conclusions	2
Recommendations	2
Statement of Qualifications	3

PERSONNEL EMPLOYED

1. Orville Hicks - Operator for the period June 9 to 12, 1960.
2. Hugo Laanela - Helper for the period June 9 to 12, 1960.
3. J. A. C. Keefe - Geophysicist-supervisor for the period June 9 to 12.
4. R. Guenther - Draughtsman - two days' time.

Line cutting time is not included in the above figures.

COST OF GEOPHYSICAL LABOUR

1. Orville Hicks	- 4 days at \$17.00 =	\$ 68.00
2. Hugo Laanela	- 4 days at \$17.00 =	\$ 68.00
3. J. A. C. Keefe	- 4 days at \$30.00 =	\$120.00
4. R. Guenther	- 2 days at \$16.00 =	<u>\$ 32.00</u>
	Total:	<u>\$288.00</u>

ELECTROMAGNETIC SURVEY

A Sheridan-Kelk Magniphase Dual Frequency Horizontal Coil Electromagnetic Unit was used. The instrument measures amplitude and phase change of the secondary electromagnetic field relative to primary output at frequencies of 800 and 2,400 c.p.s. Plotted data are scale values. Each 100 scale units of amplitude are equivalent to 30% change and each 100 scale units of phase are equivalent to 24° change. A 200 foot coil separation was used.

Readings were taken at 50 foot intervals on three cross lines and a base line. No readings could be taken on lines 4 N, 8 N and 12 N because of power line interference. Data are plotted for 171 stations or 0.98 miles of line. The considerable relief of the grid area makes amplitude readings unreliable. For this reason, only phase response at the two frequencies has been plotted.

Within the limits of the survey no conductive zones are present.

MAGNETIC SURVEY

The entire grid area was covered with an Askania Torsion Magnetometer Model Gfz at 50 foot station intervals. The instrument measures variations in the vertical component of the earth's magnetic field. Two maps are presented, one shows magnetic contours and the


other shows magnetic profiles. Reading values are in gamma. Magnetic ties were made every hour, thus ensuring a station value accuracy of ± 10 gamma. A total of 215 stations or a line length of 1.97 miles of line is plotted. Magnetics have partially delineated a contact which strikes northeast-southwest and deepens to the south.

CONCLUSIONS

Due to presence of severe power line noise it cannot be concluded that no conductor is present. Magnetics infer that the suspected contact has been found.

RECOMMENDATIONS

An induced polarization check will be necessary in this vicinity. Conventional E.M. and Afmag will not function properly.



J. A. C. Keefe, P. Eng.
Geophysicist,
McIntyre Porcupine Mines, Limited.

JACK:sl

STATEMENT OF QUALIFICATIONS

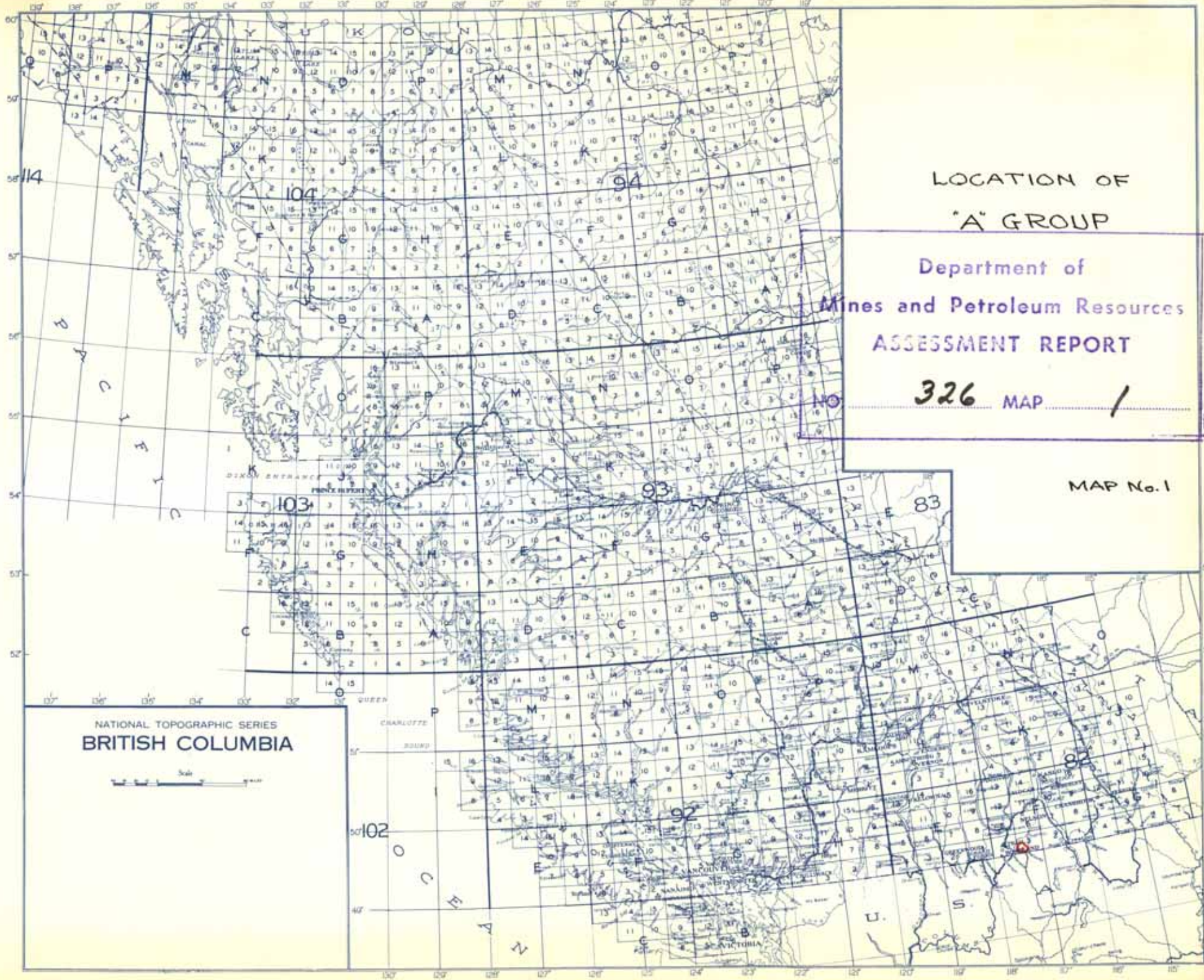
I, J. A. C. Keefe of the town of Oakville, in the province of Ontario do hereby certify as follows:

1. That I am a geophysicist,
2. That I am a graduate of the University of Toronto (B.A. Sc. 1950 and M.A. 1951),
3. That I am a member of the Association of Professional Engineers of Ontario,
4. That the operator, Orville Hicks, who handled the geophysical work on the Shenango Canyon "A" claim group from June 9 to 12, 1960, was qualified to do so.



J. A. C. Keefe, P. Eng.

Dated at Toronto
this 23rd day of November, 1960.



LOCATION OF
"A" GROUP

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

326 MAP 1

MAP No. 1

NATIONAL TOPOGRAPHIC SERIES
BRITISH COLUMBIA



102

103

104

93

92

94

83

82

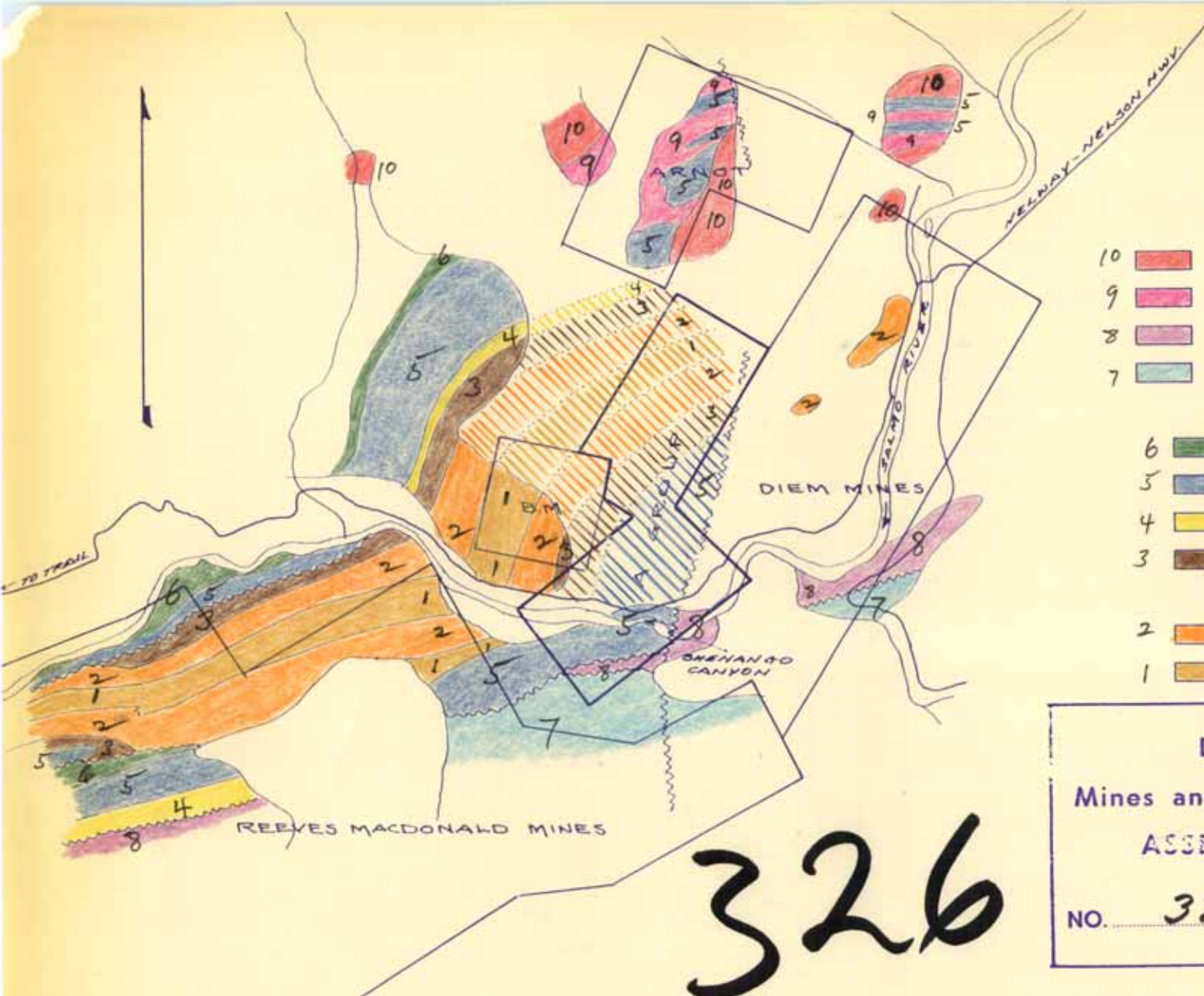
114

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CHARLOTTE
ROAD

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S.



- 10 [Red Box] GRANITE
- 9 [Pink Box] GRANITIZED
- 8 [Purple Box] ACTIVE FORMATION - blk. arg.
- 7 [Light Blue Box] NELWAY FORMATION - ls., dol.
- LAIB FORMATION
- 6 [Green Box] EMERALD - phyl., arg.
- 5 [Blue Box] REEVES - ls.
- 4 [Yellow Box] TRUMAN - phyl., arg.
- 3 [Brown Box] RENO - qtzte.
- QUARTZITE RANGE FORMATION
- 2 [Orange Box] NEVADA - mic. qtzte.
- 1 [Light Orange Box] NUGGET - qtzte.

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 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 326 MAP 2

326

GEOLOGY FROM B.C. DEPT. OF MINES BULLETIN NO. 41.

////// PROJECTED CONTACT.

MCINTYRE PORCUPINE MINES LTD.

GEOLOGY OF A GROUP

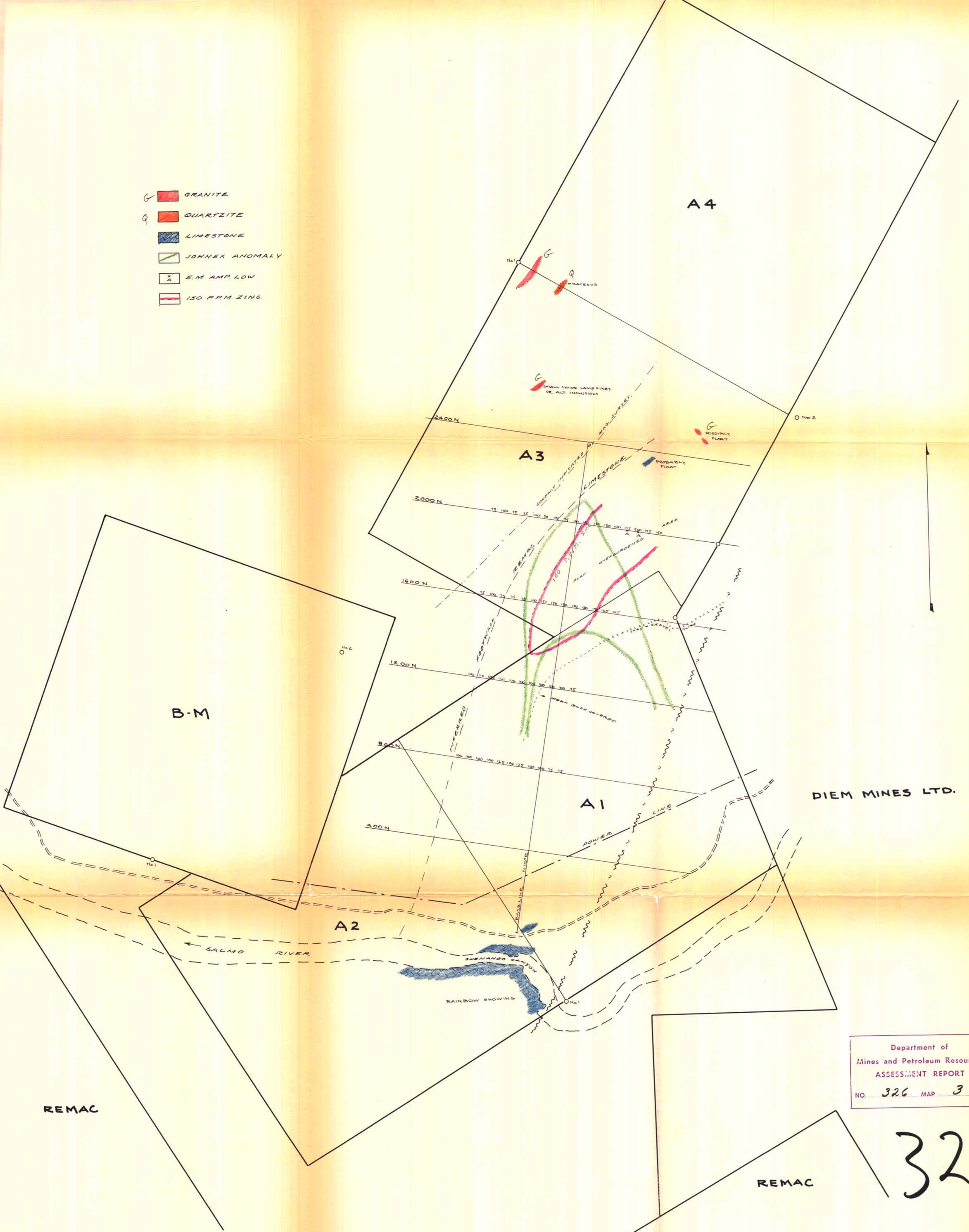
SHENANGO CANYON - SALMO, B.C.

July Dec. 12, 1960

SCALE: 1" = 2000'

MAP No. 2

- G GRANITE
- Q QUARTZITE
- LIMESTONE
- JOHNEK ANOMALY
- x E.M. AMP. LOW
- 150 P.P.M. ZINC



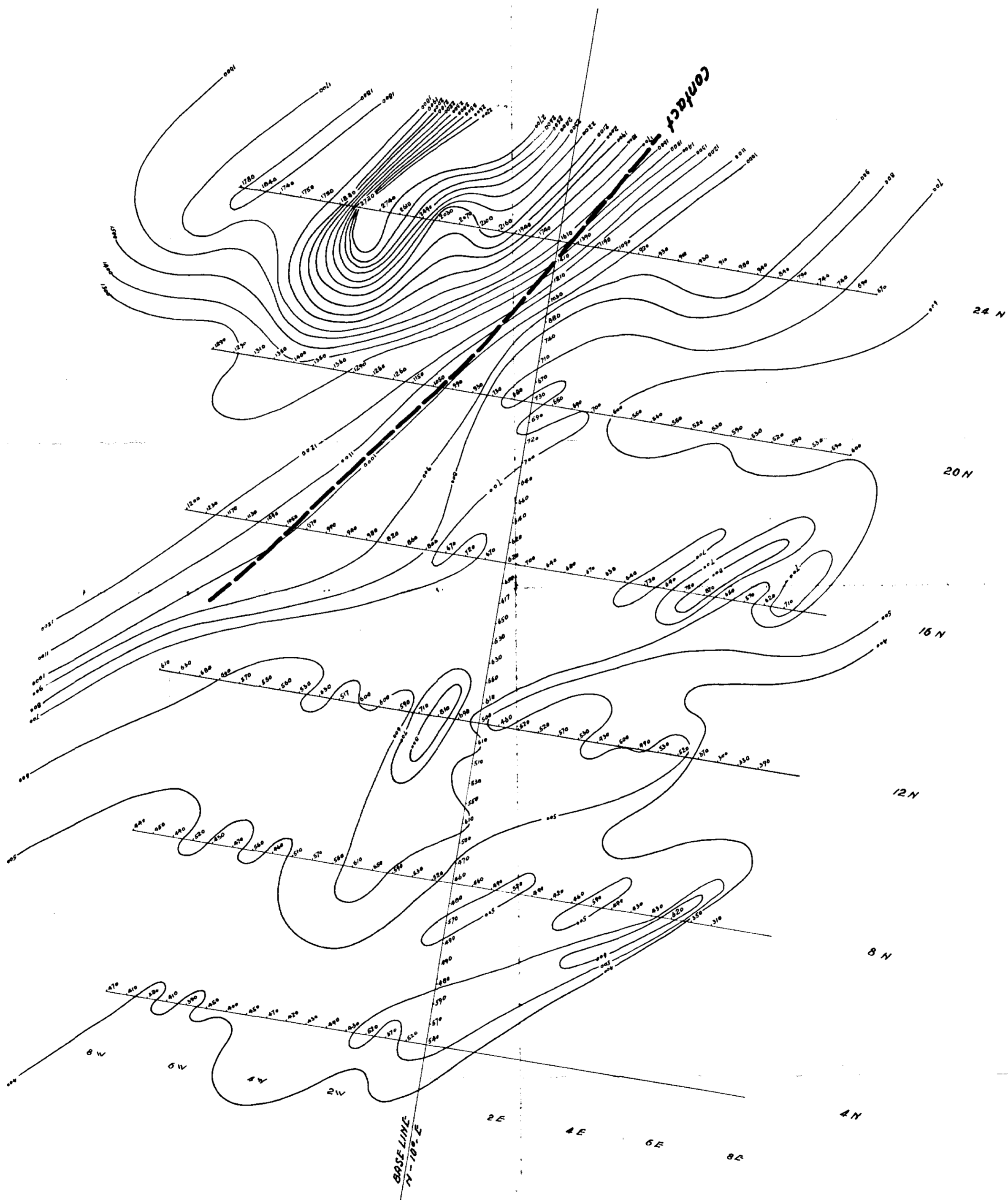
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 326 MAP 3

326

MCINTYRE PORCUPINE MINES LTD.
A GROUP
SALMO AREA - B2 F3

908 - JULY 4, 1960

SCALE: 1" = 200'
MAP No. 3
Report 326

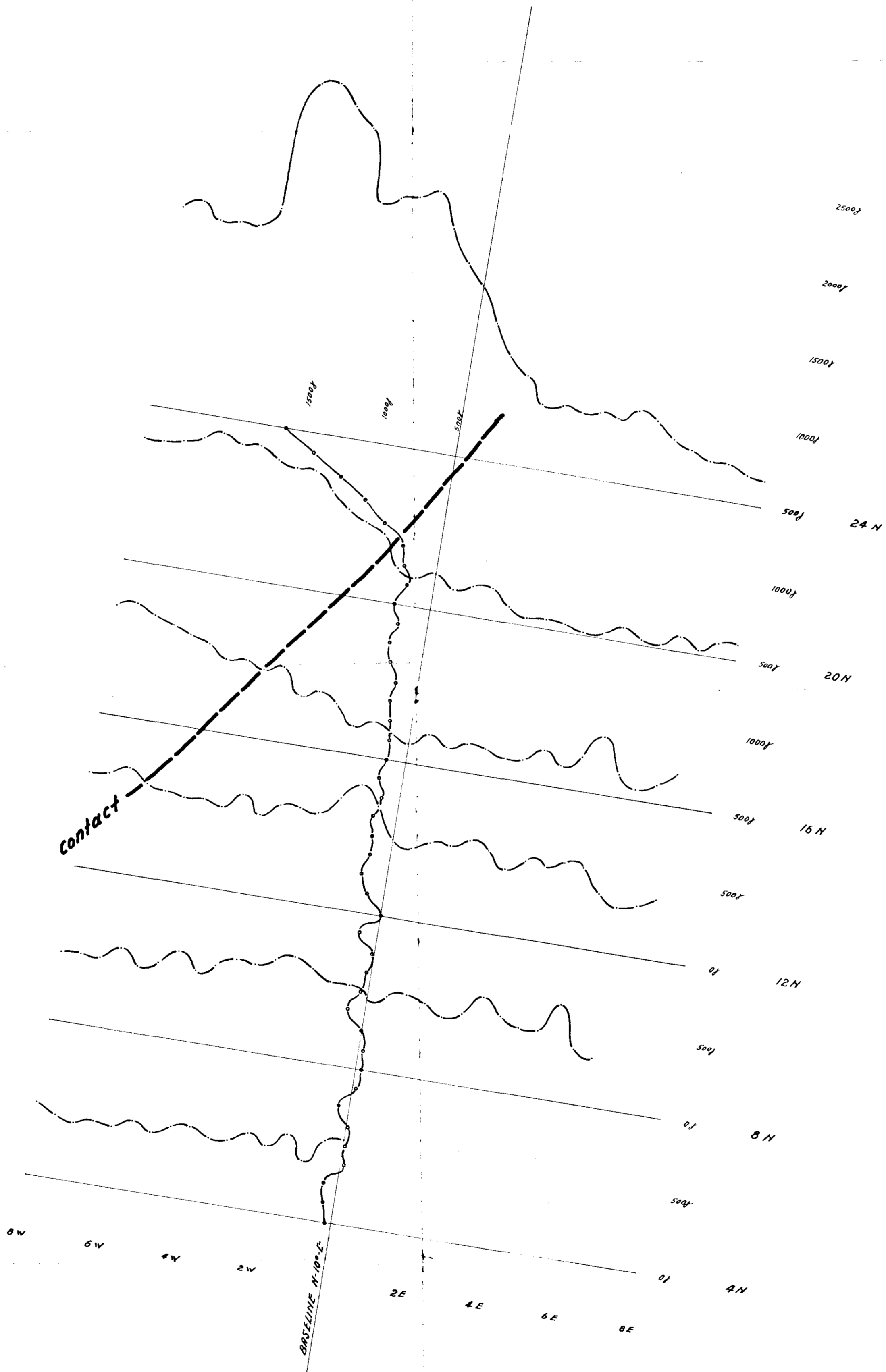


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 326 MAP 4

326

Contour Interval - 100 Gamma

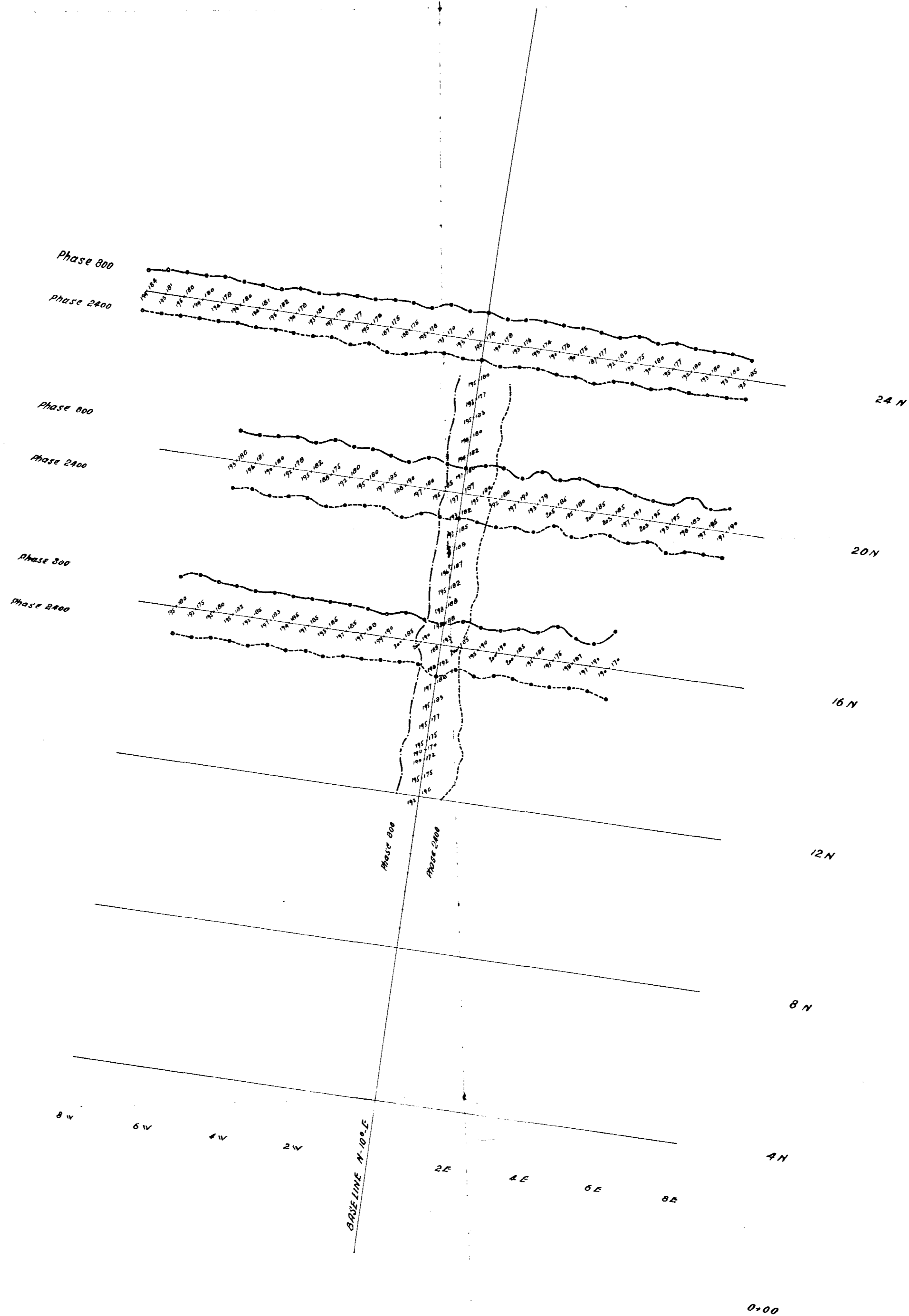
MAP No. 4
McIntyre Porcupine Mines Ltd.
MAG. CONTOUR
SHENAGO CANYON PROPERTY
A GROUP
SALMO, B.C.
WORK: O. H. SCALE: DATE:
PLOT: R. G. 1" = 200' JUNE 12, 1960.
INT.: J. K.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 326 MAP 5

326

MAP No. 5
M^cIntyre Porcupine Mines Ltd.
MAG. PROFILE
SHENAGO CANYON PROPERTY
A GROUP
SALMO, B.C.
WORK: O.H. SCALE: 1" = 200'
DLOT: R.G. INT.: J.K. DATE: JUNE 12, 1960



326

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 326 MAP 6

PROFILES SHOW PHASE
CHANGE AT 800 & 2400 C.P.S.
1" = 100 SCALE DIVISIONS or 24 degrees

MAP No. 6
McIntyre Porcupine Mines Ltd.
H.E.M. - 200' CABLE
SNEGAGO CANYON PROPERTY
A GROUP
SALMO, B.C.
WORK: O.H. SCALE: 1" = 200'
PLOT: R.G. 1" = 100 units DATE: JUNE 12, 1960
INT.: J.K.