

A Geophysical Report on  
Magnetic & Induced Polarization Surveys  
on  
The TOP Claim Group (59°, 131°, N. W.)  
by  
Peter E. Walkott, P. Eng.  
November 1970

5014

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 3014 MAP

A REPORT

on

GROUND MAGNETIC

and

INDUCED POLARIZATION SURVEYS

Smart River Area, B.C.

For

BOLIVAR MINING CORPORATION LIMITED

Vancouver, British Columbia

3014

By

PETER E. WALCOTT & ASSOCIATES LTD.

November 1970

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## INTRODUCTION

Between August 1st and September 5th and October 5th and 12th, 1970, Peter E. Walcott & Associates Limited carried out ground magnetic and induced polarization surveys over part of a property, located in the Smart River Area of Northern British Columbia, optioned by Bolivar Mining Corporation Limited.

The surveys were carried out over a handcut line grid, the lines of which were turned off at right angles from a N 20° E baseline, and chained and picketed at 100 foot intervals. Magnetic surveying was also conducted over an extension of the grid system to the South.

Readings of relative vertical intensity of the earth's field were taken every 100 feet along the picket lines using a fluxgate magnetometer, with additional readings at closer intervals in areas of steep magnetic gradients.

Initially measurements (first to fourth separation) of apparent resistivity and frequency effect (the I.P. response parameter) were made over two lines using the "dipole - dipole" method of surveying with 200 and 400 foot electrode separations and frequencies of 0.3 and 5 c. p. s. to determine the optimum separation. Measurements for the rest of the survey were then made using the 300 foot separation.

The surveys were temporarily halted at the beginning of September for a proposed three week period to release the crew and equipment to undertake a more pressing survey. However due to a most unfortunate helicopter accident, in which the sling load carrying the I.P. equipment was dropped and smashed beyond repair, the I.P. survey was never resumed. The magnetic survey was resumed in October but had to be abandoned after avalanche conditions were encountered on the mountain sides.

The I.P. data are presented in contour form on individual line profiles contained in this report, while the magnetic measurements along with a plot of the "second separation" resistivity measurements are shown in contour form on plan maps of the line grid (Maps W-119-1 to -3, scale 1" = 400 feet) that accompany this report. The location of the I.P. anomalies are also shown on a plan map of the line grid (Map W-119-4, scale 1" = 400 feet).

PROPERTY, LOCATION AND ACCESS

The property is located in the Atlin Mining Division of British Columbia, and consists of the following mineral claims:

TOP 50, 52, 65 - 81, 83, 85, 87, 89, 91 - 96, 107 - 112,  
125, 127, 129, 200 - 335.

The claims are situated between elevations of 4000 and 5000 feet, largely above timberline, some 5 miles east of Swift Lake, British Columbia, and some 9 miles south of Mile 759, Alaska Highway, where the highway crosses the Smart River.

Access was obtained by means of helicopter from either of two landing sites on the Alaska Highway: (a) a gravel pit at Mile 752 or (b) Mile 759 the Smart River highway intersection.

PREVIOUS WORK

Previous work done on the claim group includes linecutting, soil sampling, trenching and geological mapping by Mastodon -Highland Bell Mines Ltd. in 1967.

The results of the 1967 work are well documented in a report by J.B.P. Sawyer.

PURPOSE.

The purpose of the survey was to

1. determine by the magnetic method the extent of magnetite - pyrite chalcopyrite bearing skarn type rocks, abundant outcroppings of which occur on the property, and
2. try and locate by the induced polarization method economic concentrations of copper and molybdenum mineralization, the presence of which has been noted in the skarns and adjacent metaquartzites.

## GEOLOGY

The reader is referred to

- a. G.S.C. Paper 44 - 25 by C.S. Lord.
- b. G.S.C. Paper 68 - 55 by H. Gabrielse, "Geology of Jennings River Map Area".
- c. Assessment report on 1967 work on TOP claims by J.B.P. Sawyer.
- d. Geological report on 1970 work by staff of Cyprus Exploration Corp. Ltd., unpublished.

Briefly the area is underlain by Carboniferous metamorphic rocks, predominantly gneisses and schists with less abundant quartzites, limestones and dolomites, numerous outcroppings of which are readily visible.

The Simpson Batholith, a crude equidimensional pluton of Jurassic age, outcrops some 2 miles to the east.

Copper mineralization, associated with magnetite and pyrite, occurs in many types of skarn complex rocks on the property.



## SURVEY SPECIFICATIONS

The induced polarization (I.P.) survey was carried out using a system manufactured by McPhar Geophysics Limited of Don Mills, Ontario. Measurements with this system are made in the frequency domain.

The system consists basically of three units, a receiver, a transmitter and a motor generator. - The transmitter, which obtains its power from the 2.5 kw 400 cycle generator driven by a gasoline engine, injects current into the ground at two electrodes  $C_1$  and  $C_2$  at two preselected frequencies, while the receiver, a very stable and sensitive potentiometer tuned to the frequency selected, makes measurements of observed voltages across the potential electrodes  $P_1$  and  $P_2$ .

The data recorded in the field consists of careful measurements of the current (I) flowing through electrodes  $C_1$  and  $C_2$ , the voltage (V) appearing between the potential electrodes  $P_1$  and  $P_2$  on the low frequency, and the "percentage apparent frequency effect" appearing between  $P_1$  and  $P_2$  (the receiver is designed to measure directly

$$\text{the \% age F.E.} = \frac{(P_a \text{ low} - P_a \text{ high}) \times 100}{P_a \text{ high}}$$

The apparent resistivity ( $P_a$ ) in ohm-feet is proportional to the ratio of the measured voltage and current, the proportionality factor depending on the geometry of the array used. In practise  $\frac{P_a}{2\pi}$  is plotted.

A third parameter termed the "metal factor" is also calculated by dividing the apparent frequency effect by  $\frac{P_a}{2\pi}$  and multiplying by 1000.

The survey was carried out using the "dipole-dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased or decreased by increasing or decreasing "a" and/or n.

In practise the equipment is set up at a particular station of the line to be surveyed; three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, the latter consisting of two porous pots filled with an electrolyte copper sulphate solution "a" feet apart, up to the fourth separation, i.e.  $n = 4$ ; the equipment is moved 3 "a" feet along the line to the next set-up.

SURVEY SPECIFICATIONS cont'd

200 and 400 foot separations were used on two lines over the main showings to determine the optimum spacings for the survey. A 300 foot separation was then chosen to complete the survey.

Severe difficulties were encountered in injecting current into the ground on the talus slopes and over the outcrop regions even though two layered tinfoil electrodes at 2 to 3 feet depths were employed at each station (current range 0.01 to 1.00 amps on survey, maximum output of transmitter 5 amps). This factor resulted in the abandonment of the 400 foot measurements on Line 104 N.

The progress of the survey was severely handicapped by the poorly cut and in some cases non existent picket lines through the "buckbrush". Added impediment was caused by incorrectly measured 100 foot intervals necessitating frequent additions and subtractions to the precut transmitting wires.

The magnetic survey was carried out using a McPhar M-700 fluxgate magnetometer. This instrument measures variations in the vertical component of the earth's magnetic field to an accuracy of  $\pm$  10 gammas. Corrections for diurnal variations were made by tying-in to previously established base stations at intervals not exceeding two hours.

## DISCUSSION OF RESULTS

The magnetic survey showed the property to be underlain by two magnetically different rock types, Units M<sub>1</sub> & M<sub>2</sub>, as shown on Maps W-117-2 and -3.

Unit M<sub>1</sub> is believed by the writer to correspond to the Carboniferous metamorphic rocks, i. e. the quartzites, limestones, etc., and to contain magnetite rich skarns as can be seen from the irregular magnetic pattern in the centre of Map W-117-2. This area of skarn complexes corresponds with that extrapolated from known outcroppings.

Unit M<sub>2</sub> is believed by the writer to correspond to an intrusive plug. Unfortunately this unit is buried beneath a swamp and no outcrop exists for geological correlation.

Three faults are suggested from the magnetics, the strongest of which is apparently evident from the mapped geology. Two of these faults correspond with topographic lows.

The magnetics of the southern portion of the grid appear similar in character to those of Unit M<sub>1</sub>, thereby implying this area to be underlain by the forementioned metamorphic rocks with magnetite rich skarns.

The I. P. survey showed the presence of a number of anomalous zones, as can be seen from the individual profiles and Map W-117-4. Most of these zones were located in the centre part of the grid in the area of known skarn complexes and mineralization, and correspond reasonably well with anomalous copper geochemical areas.

One zone, however, located on Line 76 N, where some of the highest readings on the survey were obtained, did not correlate with magnetite rich skarn zones from magnetics or with geochemically anomalous zones.

Some suggestion exists that the causative source or sources of anomalous zones increase in size and/or number as evidenced by the frequency effects on the larger separations. This is more readily apparent from the 200 and 400 foot separation profiles on Line 100 N.

The resistivity survey mostly reflected overburden thickness and overburden and bedrock conductivity. However, resistivity lows, i. e. conductivity highs, were obtained in conjunction with high frequency effects, as evidenced by the high metal factors, in several areas.

DISCUSSION OF RESULTS cont'd

The faults, as interpreted from the magnetics, are, in the writer's opinion, evident on the contour plan of the second separation resistivity readings (Map W-117-5).

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between August 1st and September 5th, and October 5th and 12th, 1970, Peter E. Walcott & Associates Limited carried out magnetic and induced polarization surveys over part of a property optioned by Bolivar Mining Corporation Limited.

The property, i. e. the TOP claims, is located near Swift Lake, British Columbia, some 9 miles south of the Smart River - Alaska Highway junction.

The magnetic survey showed the property to be underlain by two magnetically different rock types believed to correspond to Carboniferous metamorphic rocks and a later intrusive. Contained in the metamorphic rocks are magnetite rich skarn complexes as evidenced by irregular magnetic patterns.

Three faults were suggested by the magnetic pattern, the strongest of which was evidenced from geological mapping.

The I. P. survey showed the presence of a number of anomalous zones, most of which were in the region of assumed skarn complexes, and generally coincided with copper geochemical anomalies.

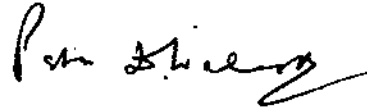
Some anomalous zones, however, were obtained outside of these assumed complexes, and are generally not completely defined.

As a result the writer concludes that the anomalous zones are most probably caused by sulphide mineralization, and recommends the following:

1. That in view of the complicated geological structure the geophysics and geology be firstly closely correlated, and their associations studied.
2. That the I. P. zones that are open be outlined, as verbally recommended in September 1970.
3. That larger separation profiles be run over two lines to see if a possible source exists at greater depth.
4. That the causes of the best anomalies, obtained from geological, geochemical and geophysical correlation, be investigated by diamond drilling.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

A handwritten signature in cursive script, appearing to read "Peter E. Walcott".

Peter E. Walcott, P.Eng.  
Geophysicist

November 1970

Vancouver,  
British Columbia

" APPENDIX "

COST OF SURVEY

Peter E. Walcott & Associates Limited undertook the magnetometer survey on a linemileage basis, and the I.P. survey on a daily basis. Mobilization and draughting costs were extra so that the total cost of the services provided was \$14,863.00.

Declared before me at the  
VANCOUVER, B. C.  
of \_\_\_\_\_, in the  
Province of British Columbia, this **APR 1** 1971  
day of \_\_\_\_\_  
Sub - Mining Recorder A.D.

*[Handwritten signature]*

.....  
A Commissioner for taking Affidavits within British Columbia or  
A Notary Public in and for the Province of British Columbia.



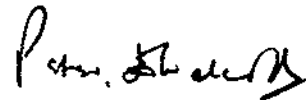
PERSONNEL EMPLOYED ON SURVEY

<u>Name</u>	<u>Occupation</u>	<u>Address</u>	<u>Date</u>
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	Aug. 6th - Sept. 7th, 70 Nov. 21st - Nov. 24th, 70
G. MacMillan	Geophysical Operator	" "	Aug. 1st - Sept. 2nd, 1970 Oct. 5th - 12th, Nov. 10th - 27th, 1970
C. Sneddon	"	" "	Oct. 5th - Oct. 12th, 1970
J. Walcott	Typing	" "	Nov. 27th, 1970
E. Scurvey	Helper	General Delivery, Whitehorse, Y.T.	Aug. 7th - Sept. 7th, 1970
S. Scurvey	"	" "	"
H. O'Brien	"	" "	"

CERTIFICATION

I, Peter E. Walcott, of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a Graduate of the University of Toronto in 1962 with a B. A. Sc. in Engineering Physics, Geophysics Option.
2. I have been practising my profession for the last eight years.
3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.
4. I hold no interests, direct or indirect, in the securities or properties of Bolivar Mining Corporation Limited nor do I expect to receive any.

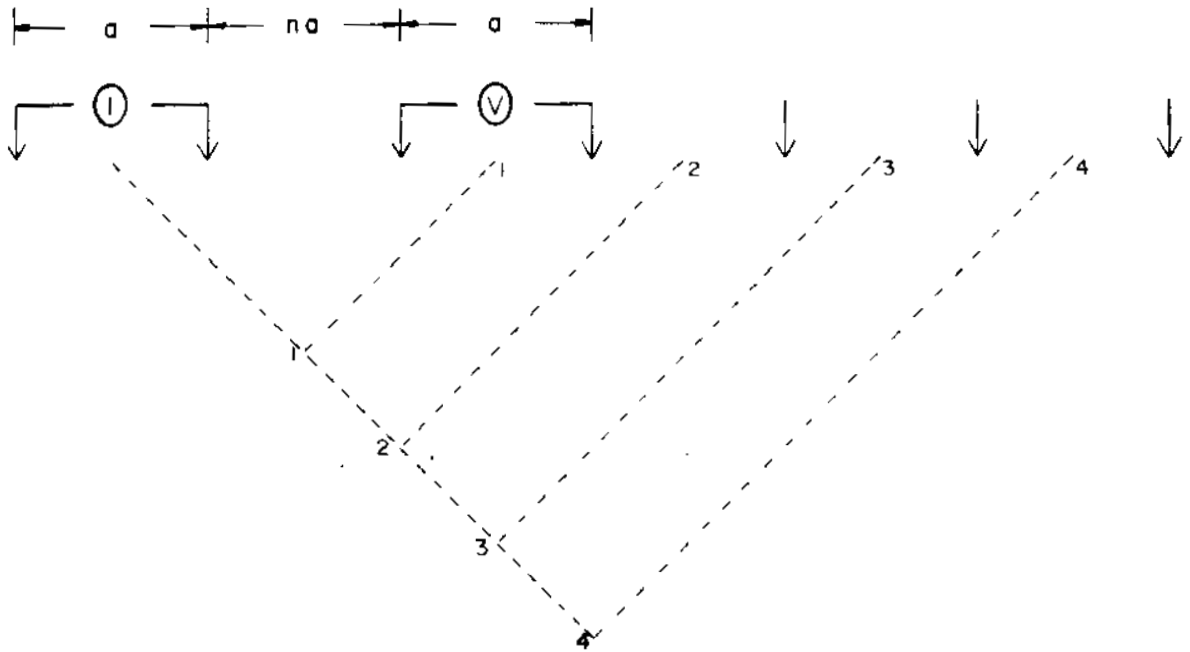


Peter E. Walcott, P. Eng.

November 1970

Vancouver,  
British Columbia

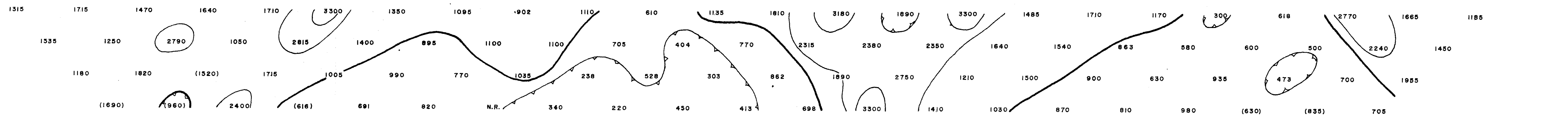
DIPOLE — DIPOLE ARRAY



- ANOMALOUS ZONE
- PROBABLE ANOMALOUS ZONE
- POSSIBLE ANOMALOUS ZONE
- QUESTIONABLE ANOMALOUS ZONE

3014

39 E 42 E 45 E 48 E 51 E 54 E 57 E 60 E 63 E 66 E 69 E 72 E 75 E 78 E 81 E 84 E 87 E 90 E 93 E 96 E 99 E 102 E 105 E 108 E 111 E 114 E 117 E



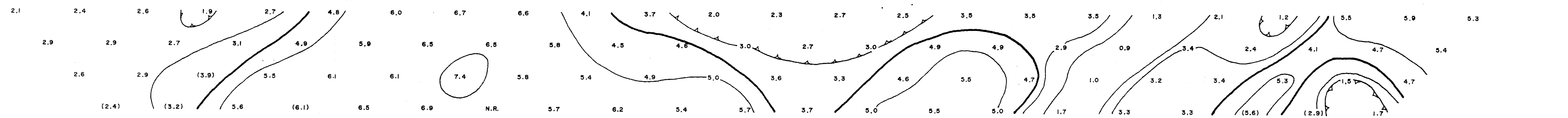
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BOLIVAR MINING CORP. LTD.

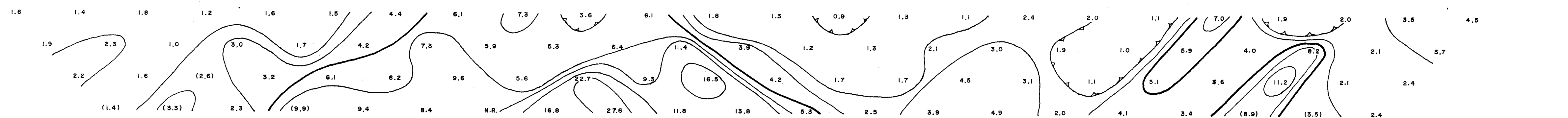
SMART RIVER AREA

LINE 96+00 N

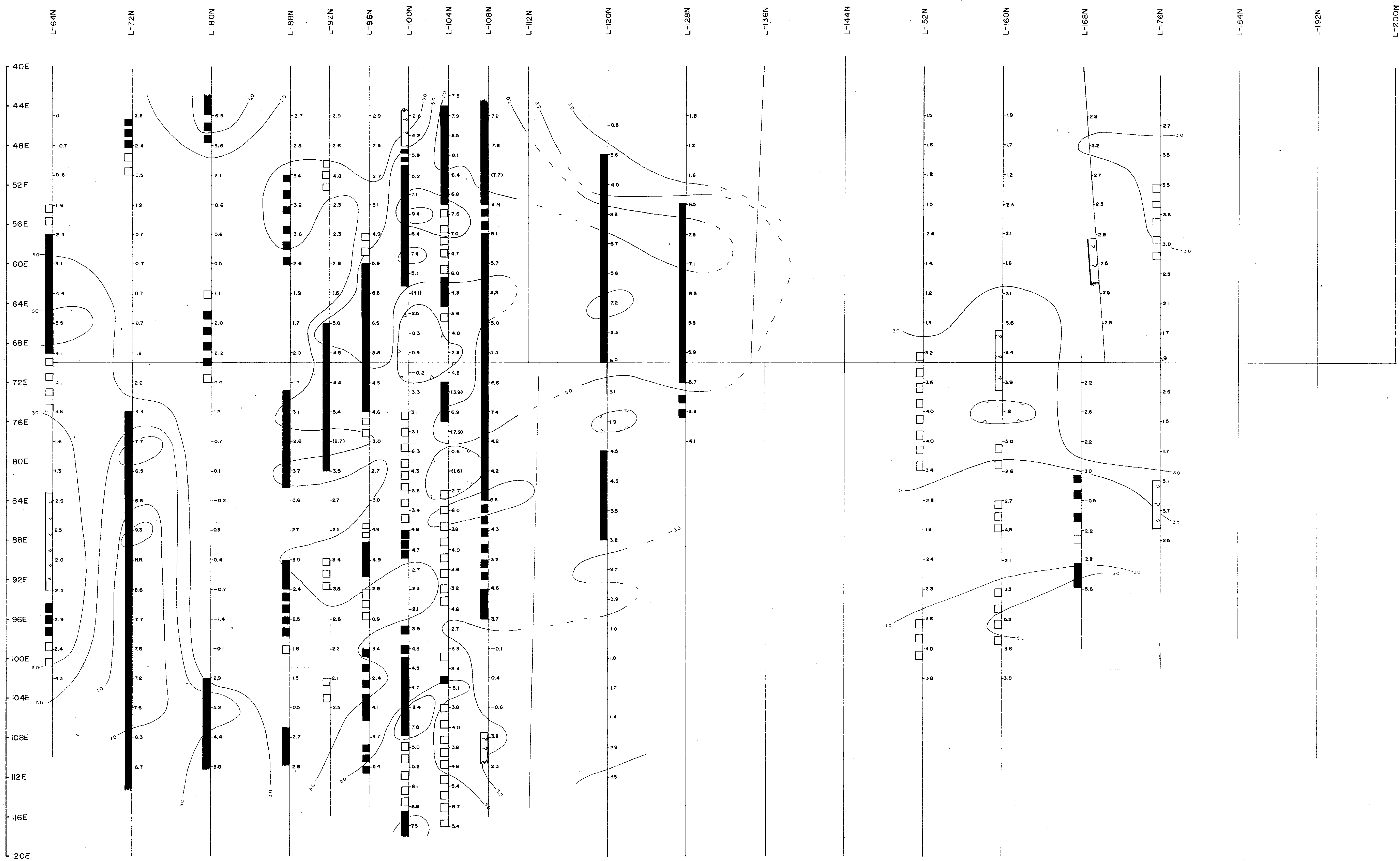
SCALE 1" = 300'  
FR - 5 + 0.3 C/SEC.  
d = 300'



FE.



M.F.



- LEGEND**
- ANOMALOUS ZONE
  - PROBABLE ANOMALOUS ZONE
  - POSSIBLE ANOMALOUS ZONE
  - QUESTIONABLE ANOMALOUS ZONE
  - % F.E. CONTOURS

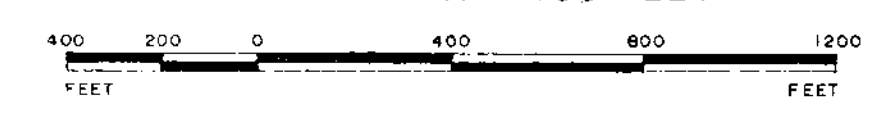
3014 M-4

**BOLIVAR MINING CORP. LTD.**

TOP CLAIMS; SMART RIVER AREA, ATLIN M.D.; BRITISH COLUMBIA

**INDUCED POLARIZATION SURVEY**  
 APPARENT FREQUENCY EFFECT CONTOURS  
 $\alpha=300'$   $n=2$

SCALE - 1 INCH = 400 FEET



MAP No. W-117-4  
 TO ACCOMPANY A REPORT BY  
 PETER E. WALCOTT P. Eng.  
 DATED - NOVEMBER 1970

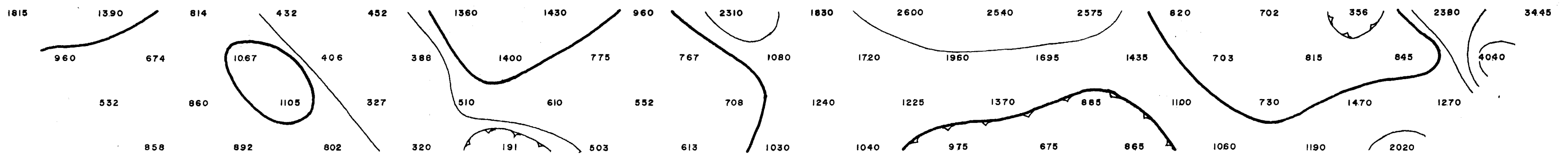
PETER E. WALCOTT & ASSOC. LTD.  
 AUG. - OCT. 1970

Department of  
 Mines and Petroleum Resources  
 3014 M-4  
 MAP 1970



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36 E 40 E 44 E 48 E 52 E 56 E 60 E 64 E 68 E 72 E 76 E 80 E 84 E 88 E 92 E 96 E 100 E 104 E 108 E 112 E 116 E



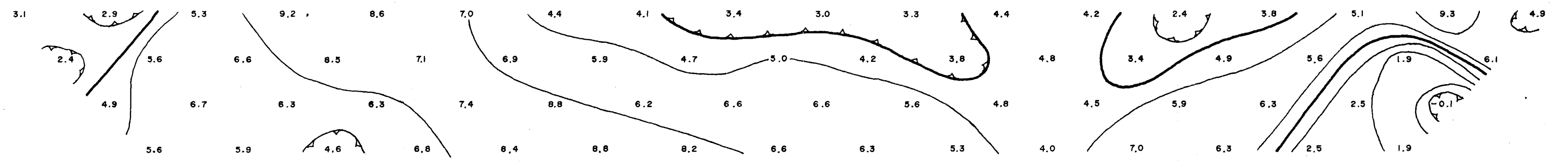
Pd/2T

BOLIVAR MINING CORP. LTD.

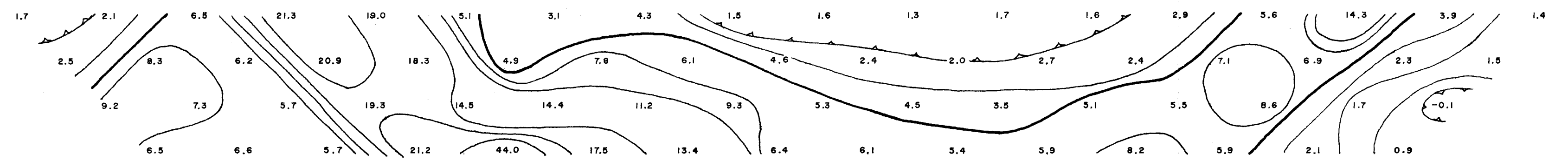
SMART RIVER AREA

LINE 100 + 00 N

SCALE 1" = 400'  
F.R. - 5 + 0.3 C/SEC.  
a = 400'



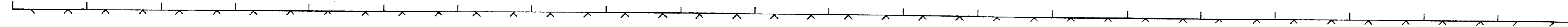
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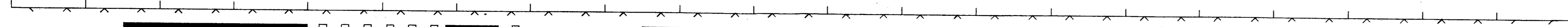
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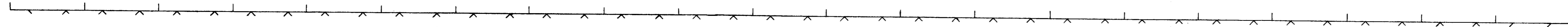
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Pa/2T

BOLIVAR MINING CORP. LTD.  
SMART RIVER AREA  
LINE 104 + 00 N

SCALE 1" = 400'  
FR - 5 + 0.3 C/SEC.  
a = 200'

F.E.

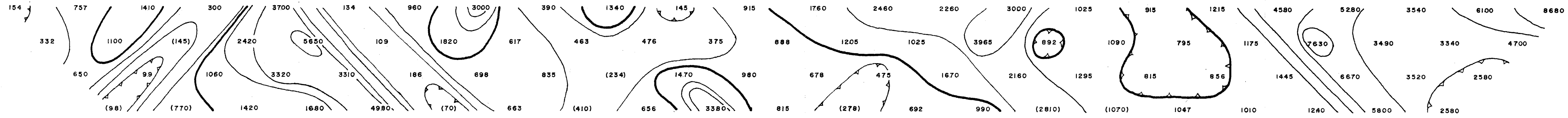
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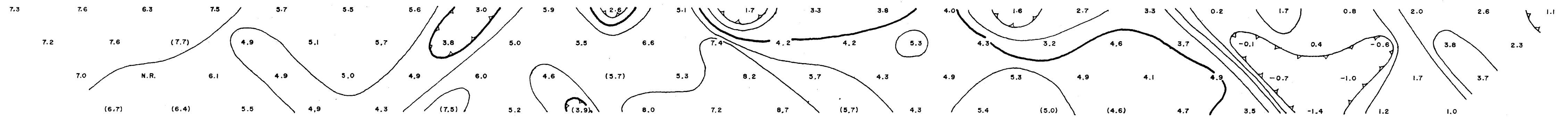
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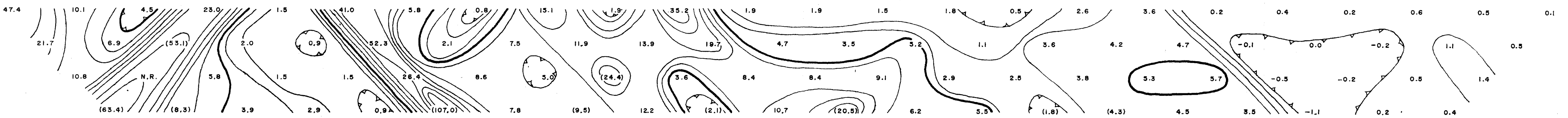
Pa/2Tt

BOLIVAR MINING CORP. LTD.  
 SMART RIVER AREA  
 LINE 108+00 N

SCALE 1" = 300'  
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 a = 300'



F.E



M.F.

3014

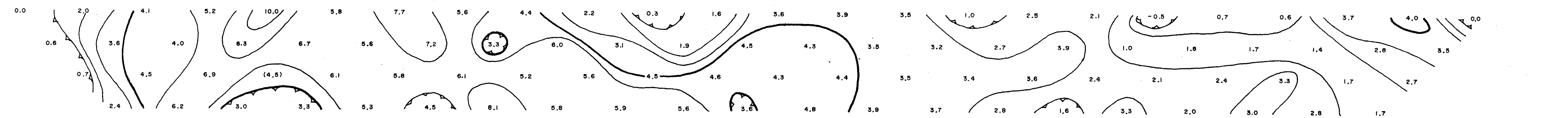
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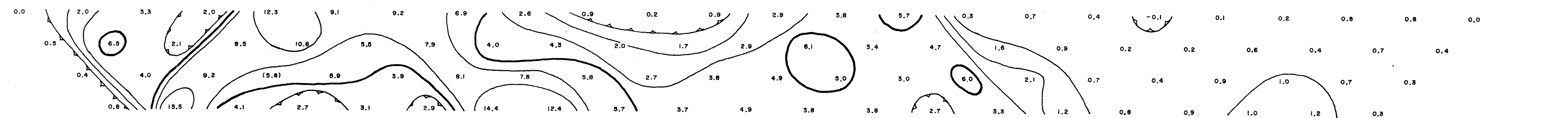
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BOLIVAR MINING CORP. LTD.  
SMART RIVER AREA  
LINE 120+00 N

SCALE 1" = 300'  
FR - 5 + 0.3 C/SEC.  
a = 300'



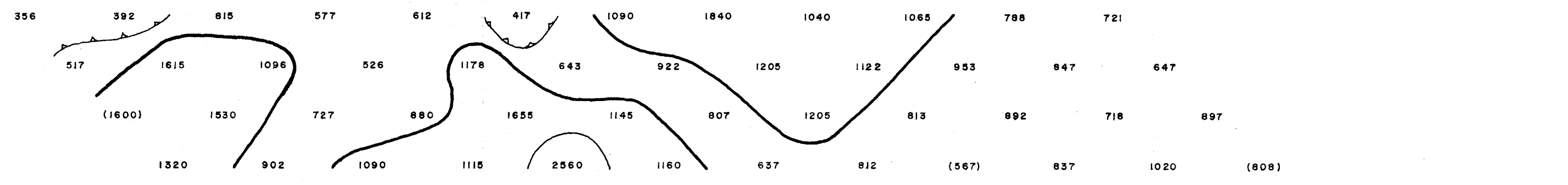
FE.



M.F.

3014

39E 42E 45E 48E 51E 54E 57E 60E 63E 66E 69E 72E 75E 78E 81E 84E 87E 90E



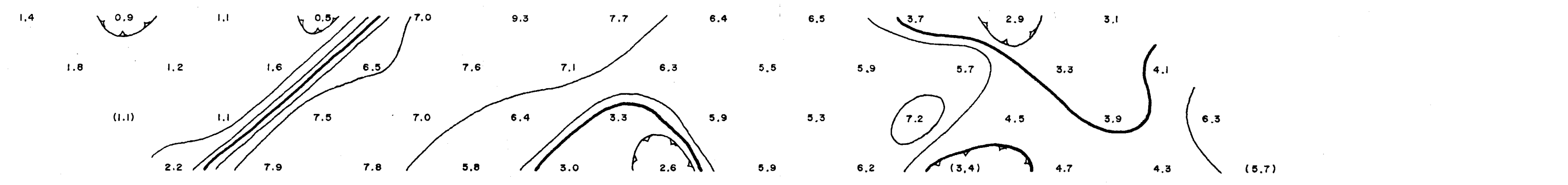
Pg/2T

BOLIVAR MINING CORP. LTD.

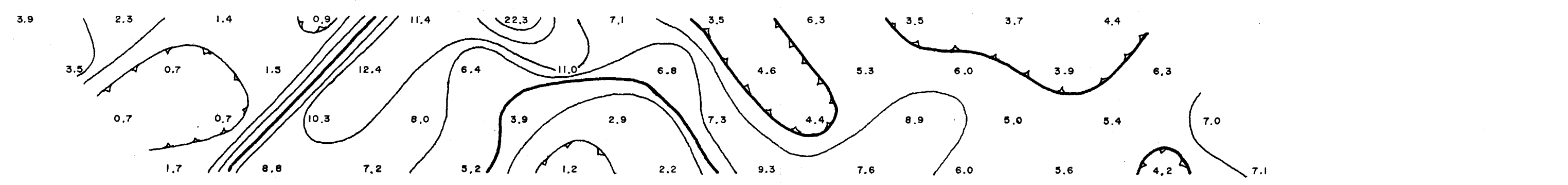
SMART RIVER AREA

LINE 128 + 00 N

SCALE 1" = 300',  
F.R. - 5 + 0.3 C/SEC.  
a = 300'



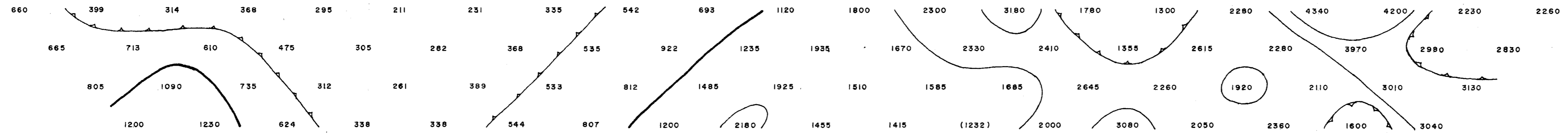
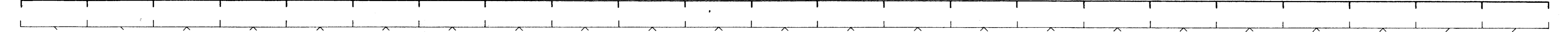
F.E.



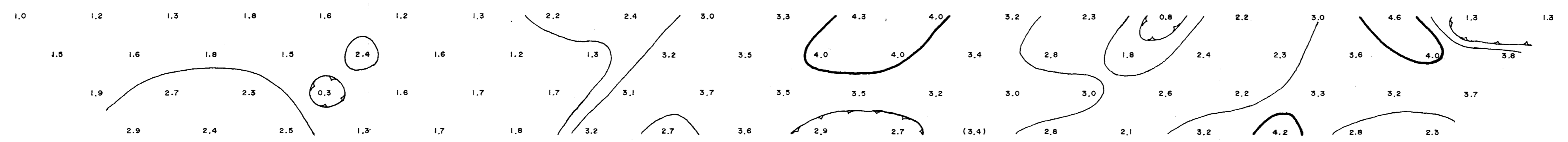
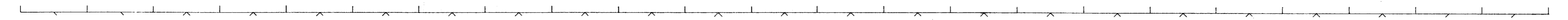
M.F.

3014

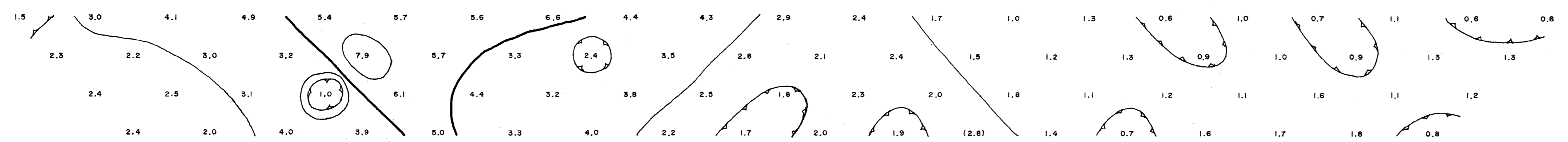
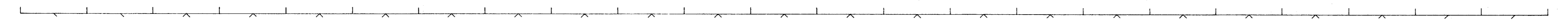
39E 42E 45E 48E 51E 54E 57E 60E 63E 66E 69E 72E 75E 78E 81E 84E 87E 90E 93E 96E 99E 102E 105E 108E



Pa/2T



FE.

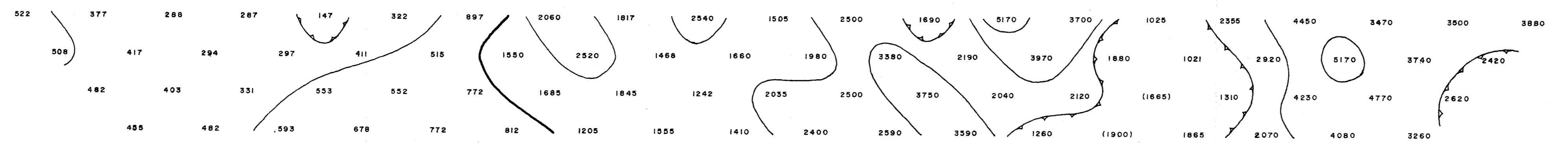


M.F.

BOLIVAR MINING CORP. LTD.  
SMART RIVER AREA  
LINE 152 + 00 N  
SCALE 1" = 300'  
FR. - 5 + 0.3 C/SEC.  
α = 300'

3014

39 E 42 E 45 E 48 E 51 E 54 E 57 E 60 E 63 E 66 E 69 E 72 E 75 E 78 E 81 E 84 E 87 E 90 E 93 E 96 E 99 E 102 E 105 E 108 E

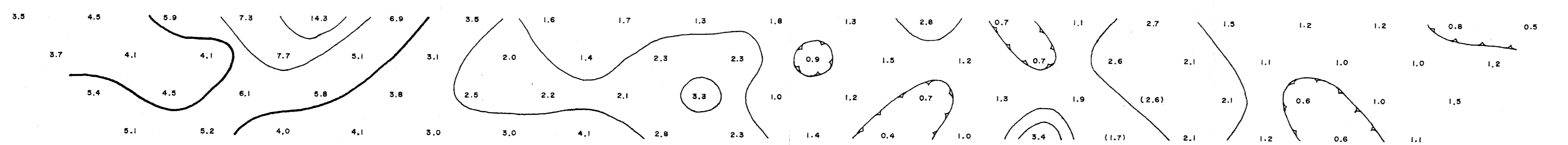
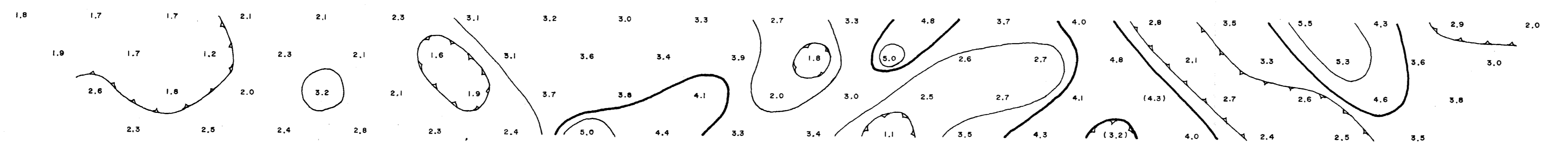


BOLIVAR MINING CORP. LTD.

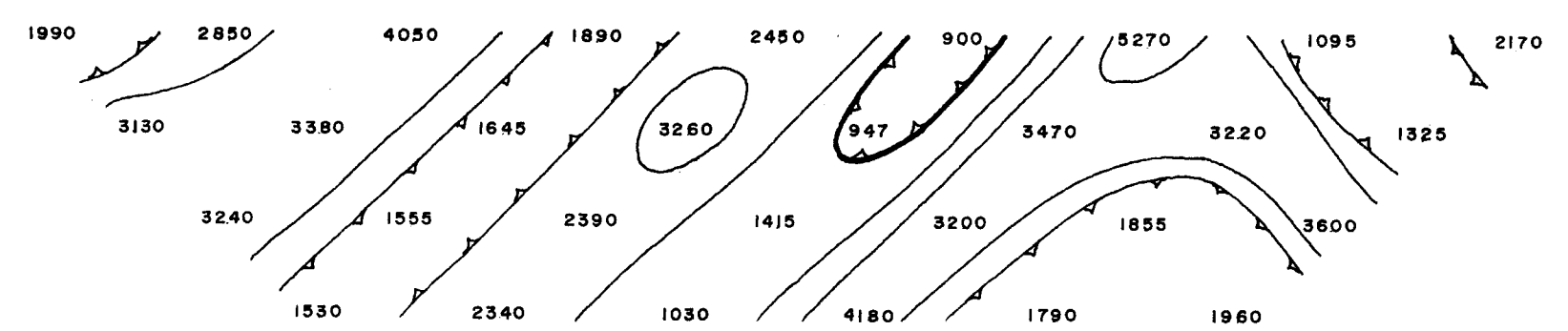
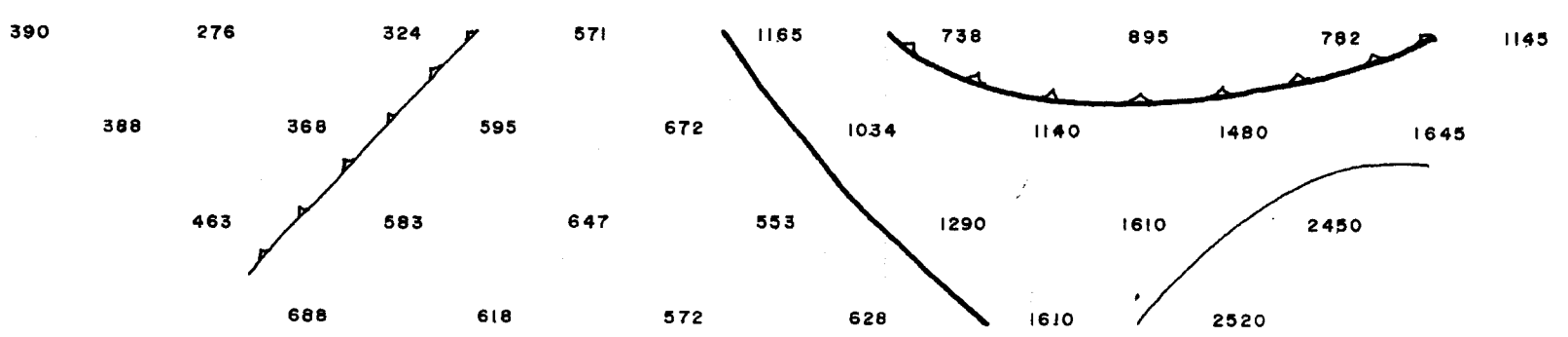
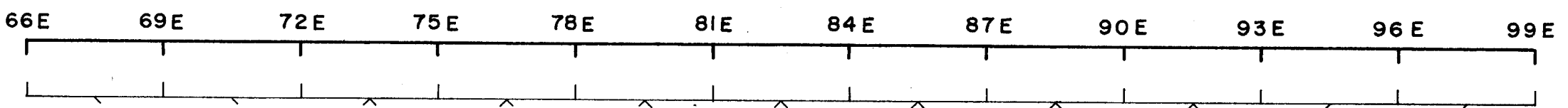
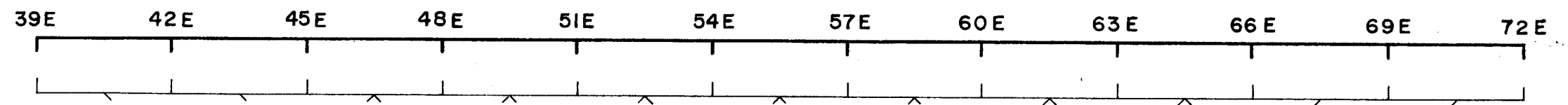
SMART RIVER AREA

LINE 160 + 00 N

SCALE 1" = 300'  
FR. - 5 + 0.3 C/SEC.  
a = 300'



3014



Pa/2π

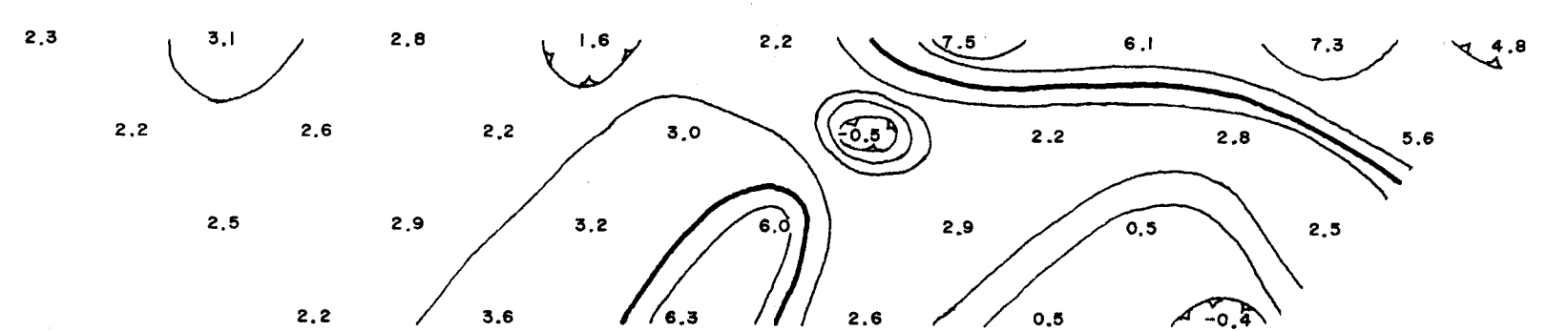
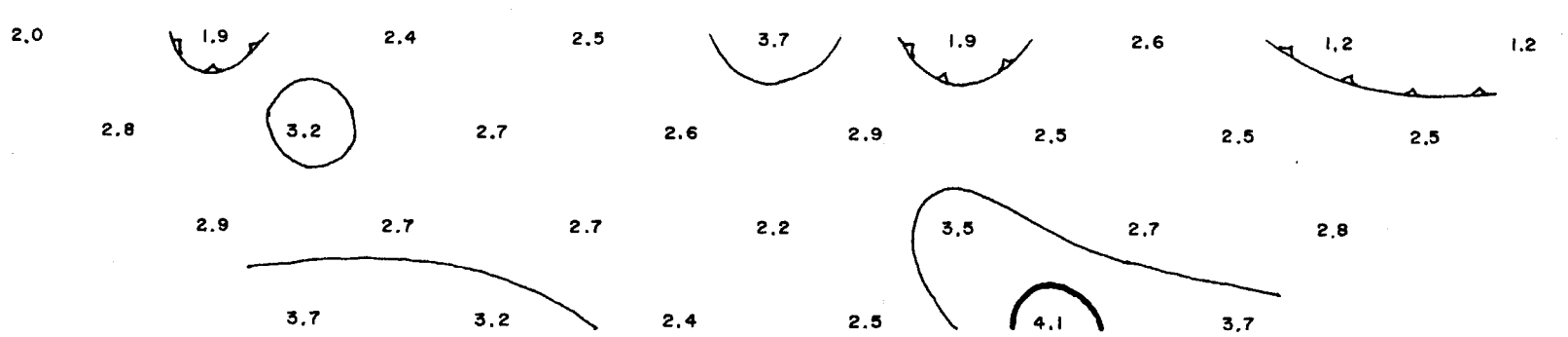
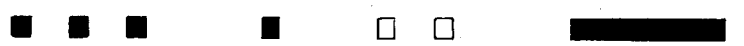
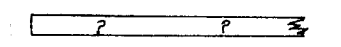
BOLIVAR MINING CORP. LTD.

SMART RIVER AREA

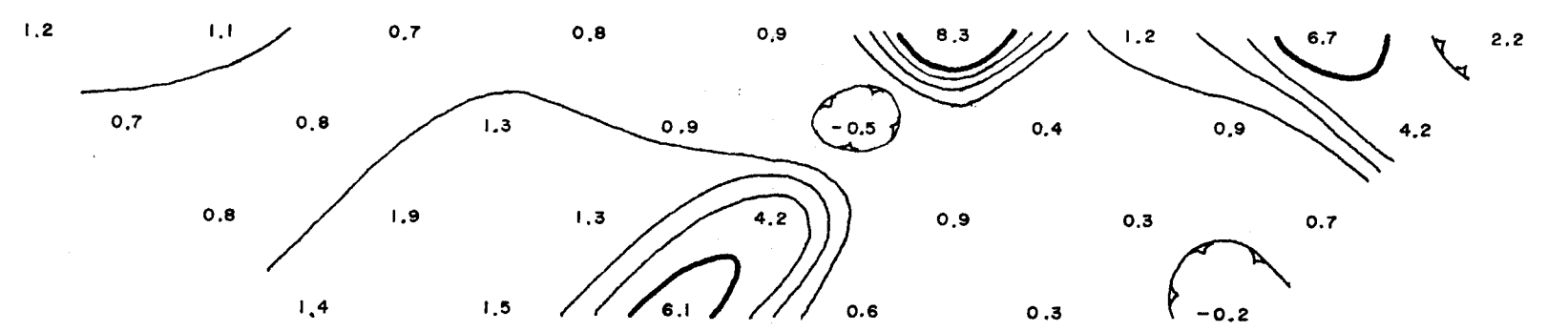
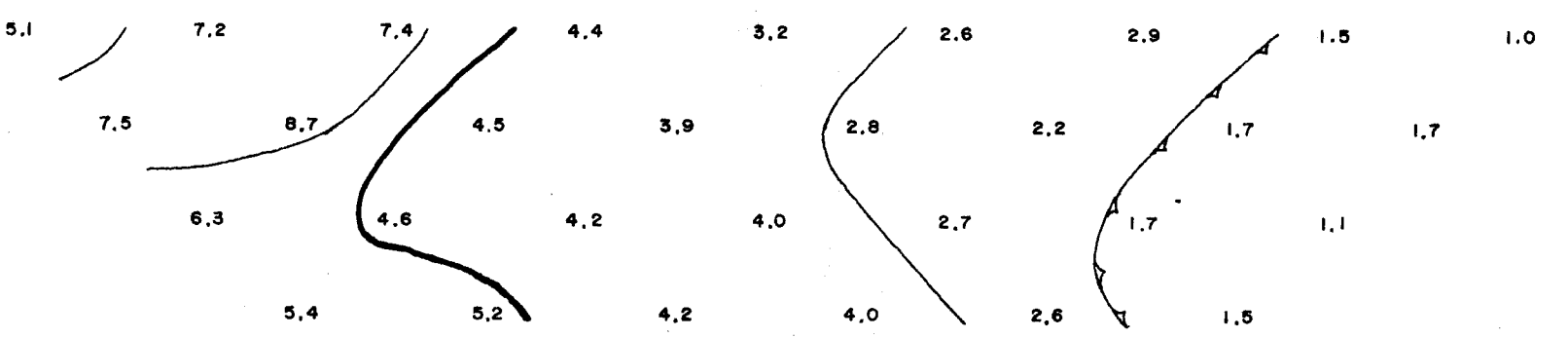
LINE 168+00 N

SCALE 1" = 300'  
FR - 5 + 0.3 C/SEC.  
α = 300'

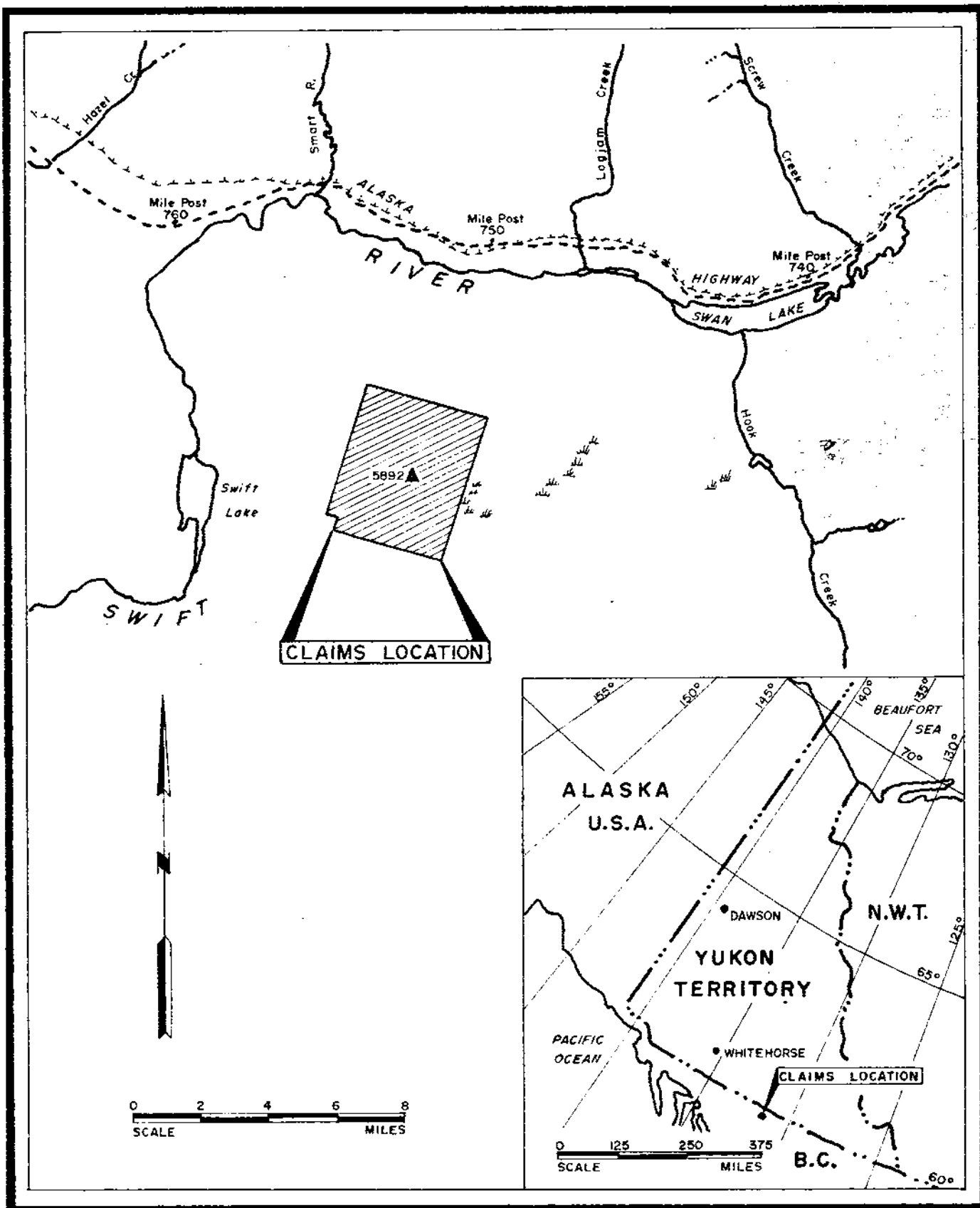
FE.



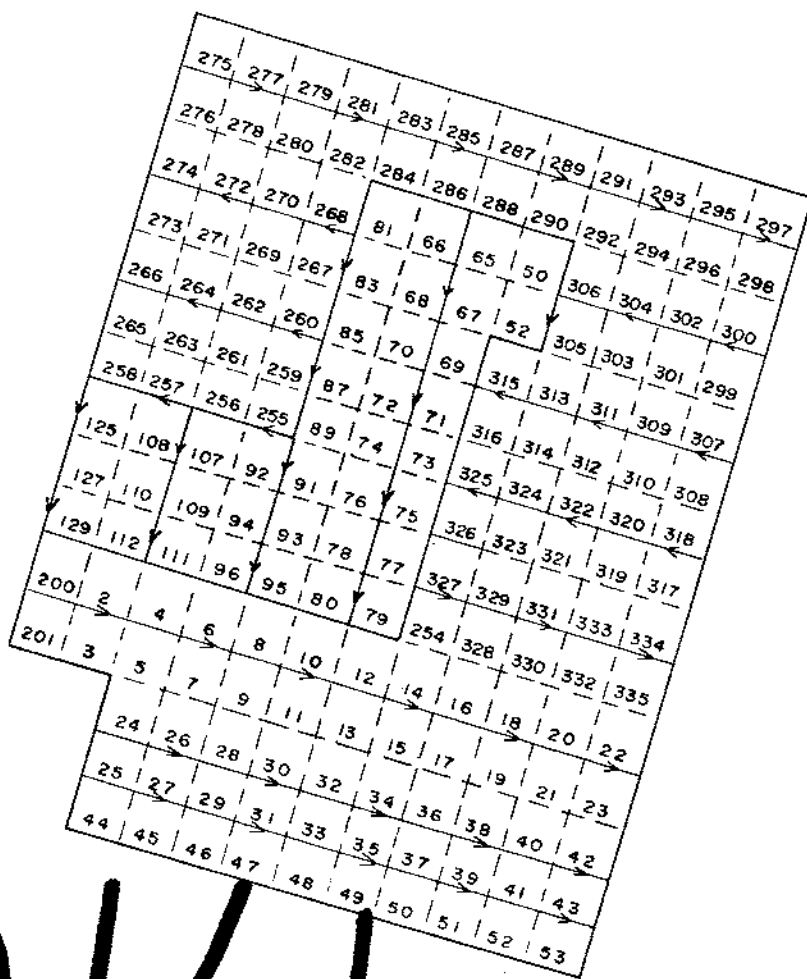
M.F.







DETAIL OF CLAIMS  
SCALE: 1" = 1 MILE



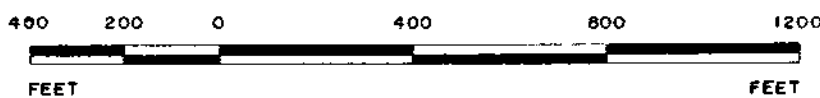
3014 M-1

**BOLIVAR MINING CORP. LTD.**

TOP CLAIMS; SMART RIVER AREA; ATLIN M.D., BRITISH COLUMBIA

**CLAIMS LOCATION MAP**

SCALE - 1 INCH = 400 FEET



MAP NO. W-117-1  
TO ACCOMPANY A REPORT  
PETER E. WALCOTT P. Eng.  
DATED - NOVEMBER 1970



PETER E. WALCOTT & ASSOC. LTD.

AUG. - OCT. 1970

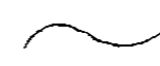


Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 3014 MAP M-1

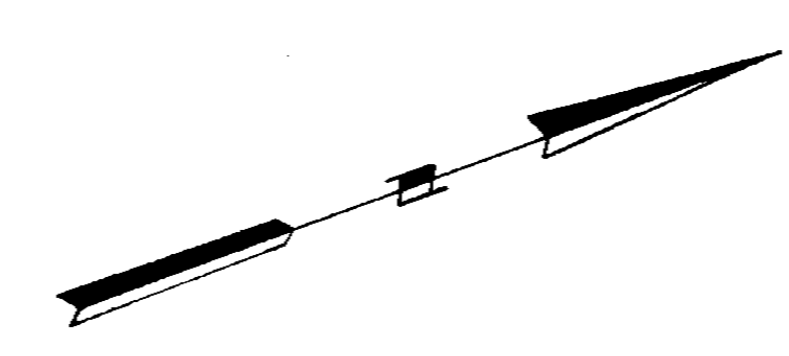




3014 M-5

**LEGEND**

-  500 OHM-METRE CONTOUR
-  INTERPRETED FAULT
-  RESISTIVITY LOW



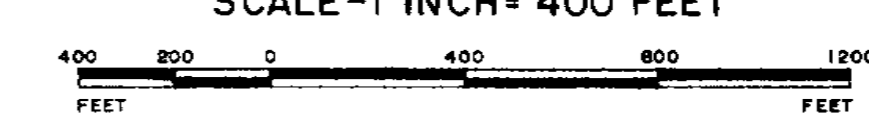
**BOLIVAR MINING CORP. LTD.**

TOP CLAIMS; SMART RIVER AREA, ATLIN M.D.; BRITISH COLUMBIA

**INDUCED POLARIZATION SURVEY**

APPARENT RESISTIVITY CONTOURS  
a = 300' n = 2

SCALE - 1 INCH = 400 FEET



MAP No. W-117-5

TO ACCOMPANY A REPORT BY **PETER E. WALCOTT & ASSOC. LTD.**

PETER E. WALCOTT P. Eng.

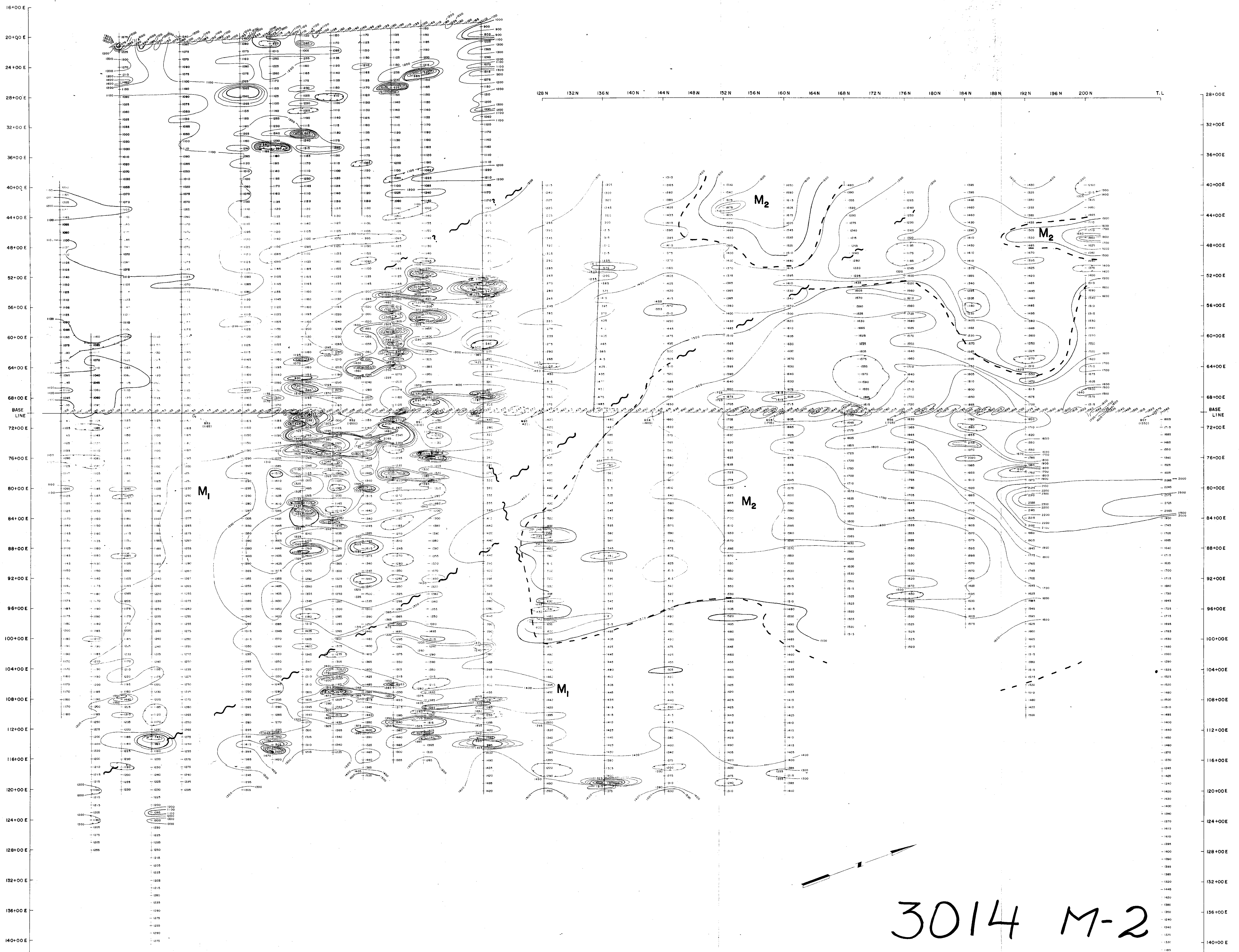
DATED - NOVEMBER 1970








AUG. - OCT. 1970

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
Map No. W-117-5

64 N 68 N 72 N 76 N 80 N 84 N 88 N 92 N 96 N 100 N 104 N 108 N 112 N 116 N 120 N 124 N 128 N

128 N 132 N 136 N 140 N 144 N 148 N 152 N 156 N 160 N 164 N 168 N 172 N 176 N 180 N 184 N 188 N 192 N 196 N 200 N T.L.



- LEGEND**
-  100 GAMMA CONTOUR
  -  1000 GAMMA CONTOUR
  -  MAGNETIC DEPRESSION
  -  INTERPRETED FAULT
  -  INTERPRETED MAGNETIC CONTACT
  -   $M_n$  INTERPRETED MAGNETIC ROCK UNIT
  -  ○ MAGNETIC BASE STATION

**BOLIVAR MINING CORP. LTD.**  
TOP CLAIMS, SMART RIVER AREA, ATLIN, B.C., BRITISH COLUMBIA

**MAGNETOMETER SURVEY**  
CONTOURS OF RELATIVE VERTICAL INTENSITY  
(IN GAMMAS)

SCALE - 1 INCH = 400 FEET

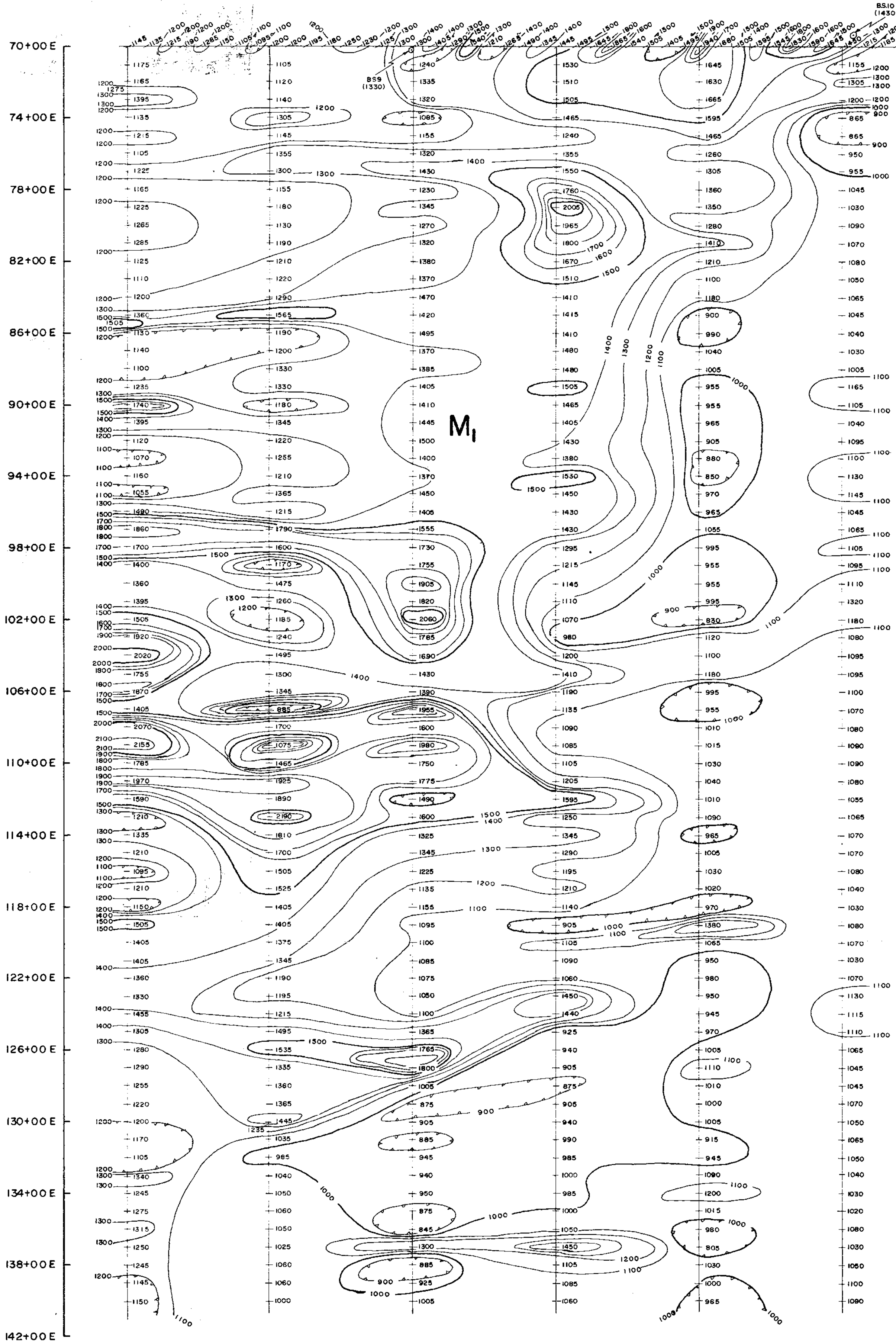
MAP NO. W-117-2  
TO ACCOMPANY A REPORT  
PETER E. WALCOTT P. Eng.  
DATED - NOVEMBER 1970

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3014 M-2  
PETER E. WALCOTT & ASSOCIATES LTD.  
AUG.-OCT. 1970






3014 M-2



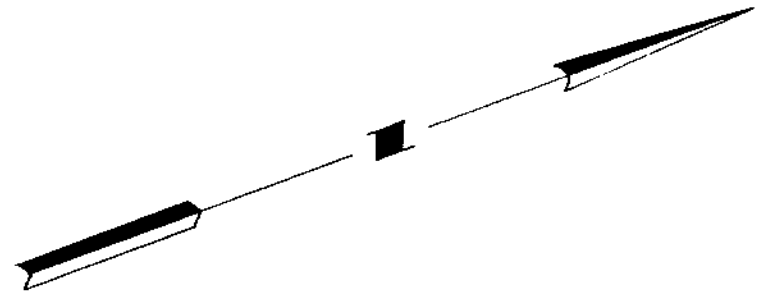
28S 24S 20S 16S 12S 8S 4S 0+00 4N 8N 12N 16N 20N 24N 28N 32N 36N 40N 44N 48N



**LEGEND**

-  100 GAMMA CONTOUR
-  1000 GAMMA CONTOUR
-  MAGNETIC DEPRESSION
-  INTERPRETED MAGNETIC ROCK UNIT
-  MAGNETIC BASE STATION

3014 M-3



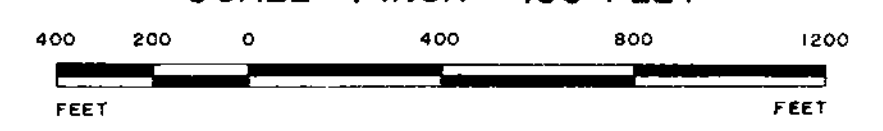
**BOLIVAR MINING CORP. LTD.**

TOP CLAIMS ; SMART RIVER AREA ; ATLIN M.D., BRITISH COLUMBIA

**MAGNETOMETER SURVEY**

CONTOURS OF RELATIVE VERTICAL INTENSITY  
(IN GAMMAS)

SCALE - 1 INCH = 400 FEET



MAP NO. W-117-3

TO ACCOMPANY A REPORT BY  
PETER E. WALCOTT P. Eng.  
DATED - NOVEMBER 1970

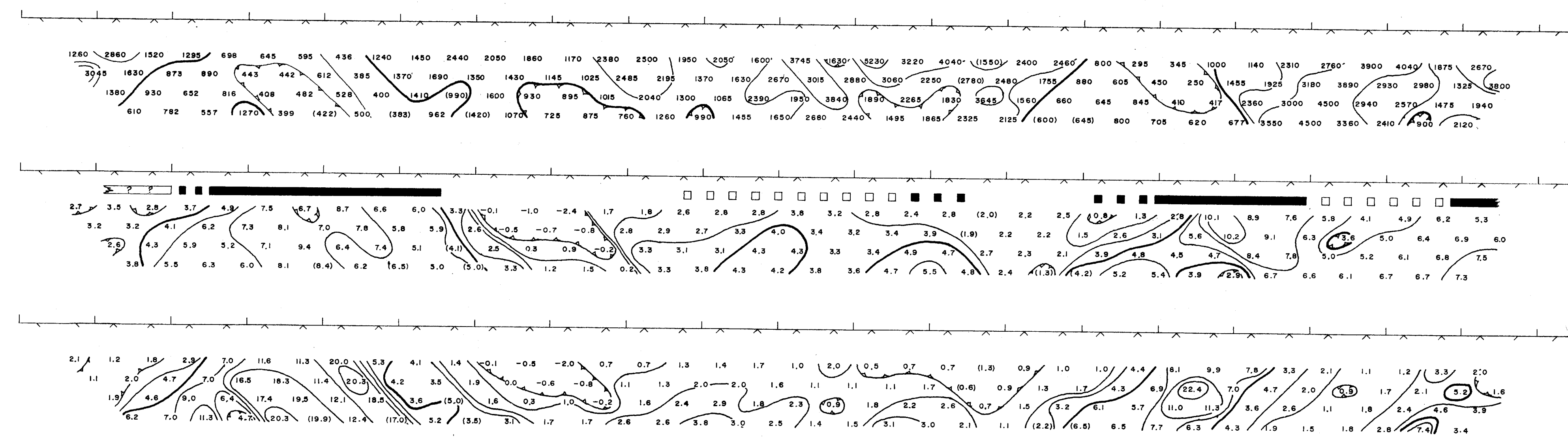
PETER E. WALCOTT & ASSOC. LTD.

AUG. - OCT. 1970

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
2014 MAP #3

# 3014

40E 44E 48E 52E 56E 60E 64E 68E 72E 76E 80E 84E 88E 92E 96E 100E 104E 108E 112E 116E 120E



Pa/2T

BOLIVAR MINING CORP. LTD.

SMART RIVER AREA

LINE 100+00 N

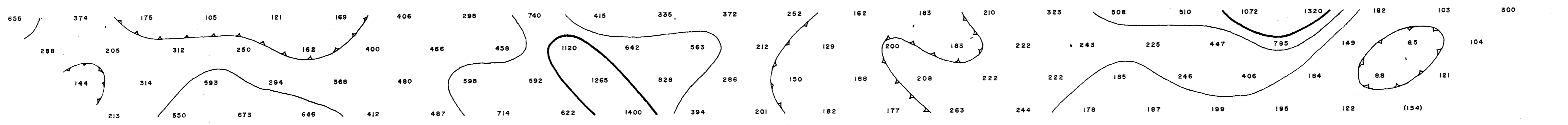
SCALE 1" = 400'  
FR - 5+0.3 C/SEC.  
a = 200'

F.E.

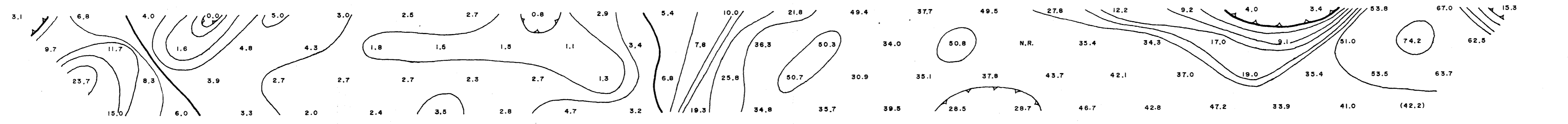
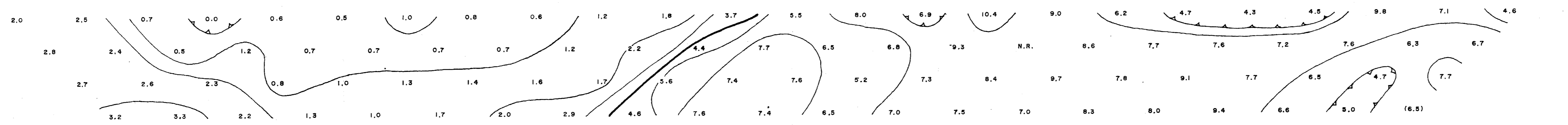
M.F.

3014

39 E 42 E 45 E 48 E 51 E 54 E 57 E 60 E 63 E 66 E 69 E 72 E 75 E 78 E 81 E 84 E 87 E 90 E 93 E 96 E 99 E 102 E 105 E 108 E 111 E 114 E 117 E



■ ■ ■ ■ □ □ □



Pa/2T

F.E.

M.F.

BOLIVAR MINING CORP. LTD.

SMART RIVER AREA

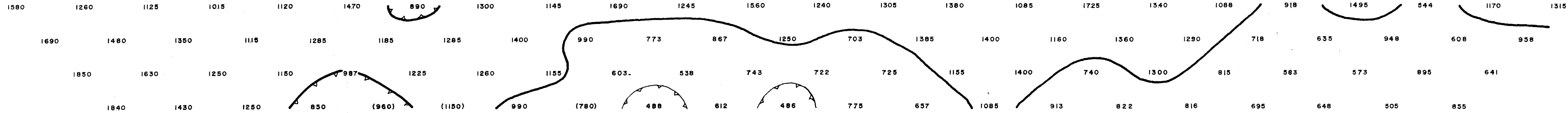
LINE 72 + 00 N

SCALE 1" = 300'  
FR - 5 + 0.3 C/SEC.  
d = 300'

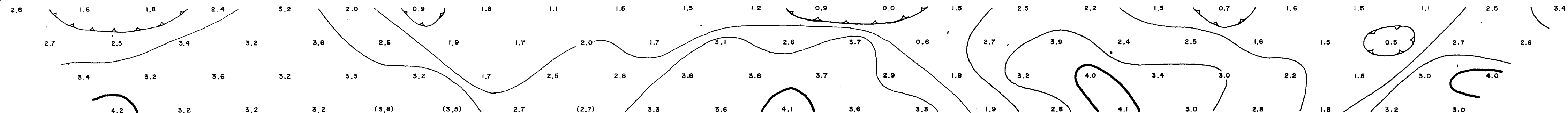


3014

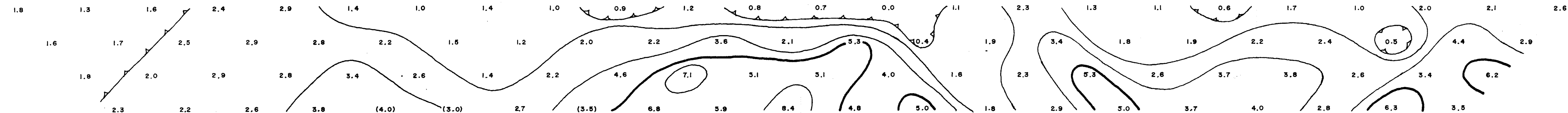
39 E 42 E 45 E 48 E 51 E 54 E 57 E 60 E 63 E 66 E 69 E 72 E 75 E 78 E 81 E 84 E 87 E 90 E 93 E 96 E 99 E 102 E 105 E 108 E 111 E 114 E 117 E



Pa/2T



F.E.



M.F.

BOLIVAR MINING CORP. LTD.

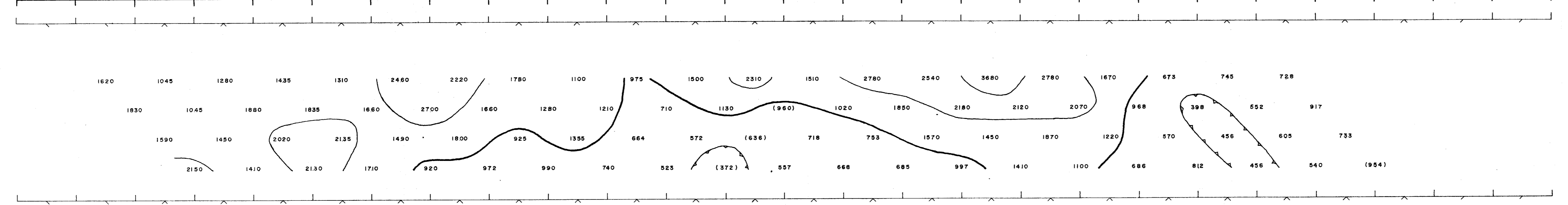
SMART RIVER AREA

LINE 88 + 00 N

SCALE 1" = 300'  
FR - 5 + 0.3 C/SEC.  
a = 300'

3014

39E 42E 45E 48E 51E 54E 57E 60E 63E 66E 69E 72E 75E 78E 81E 84E 87E 90E 93E 96E 99E 102E 105E 108E 111E 114E 117E



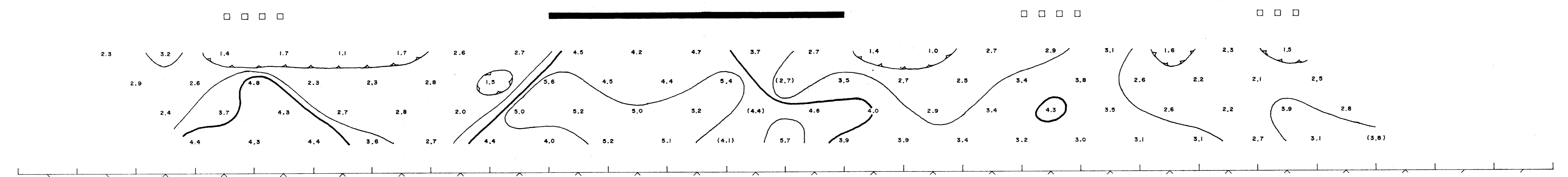
Pa/2T

BOLIVAR MINING CORP. LTD.

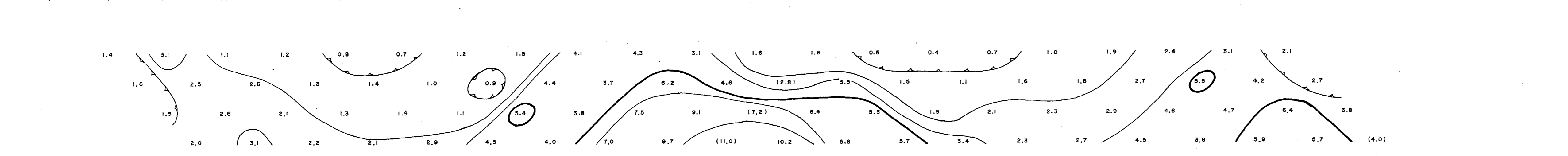
SMART RIVER AREA

LINE 92 + 00 N

SCALE 1" = 300'  
FR. - 5 + 0.3 C/SEC.  
a = 300'



F.E.

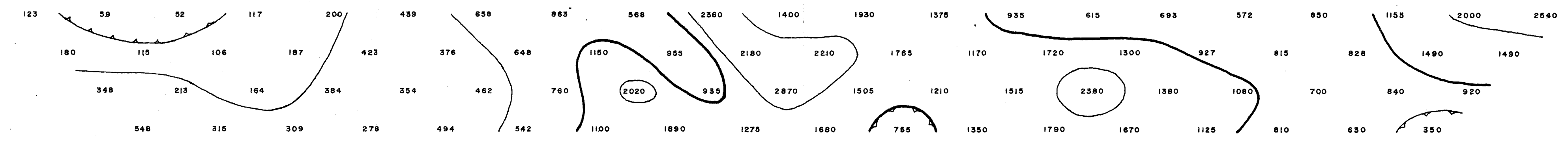


M.F.



3014

39E 42E 45E 48E 51E 54E 57E 60E 63E 66E 69E 72E 75E 78E 81E 84E 87E 90E 93E 96E 99E 102E 105E 108E



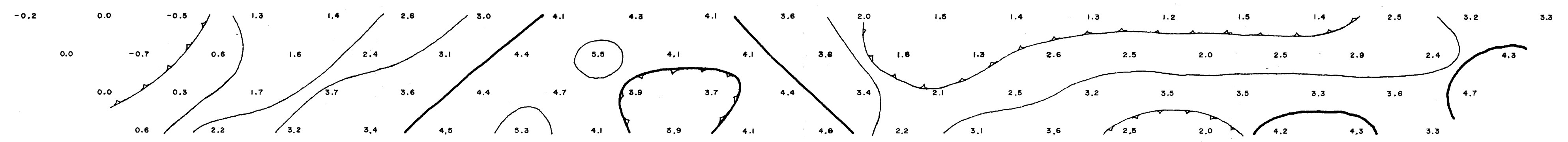
Pa/2Tt

BOLIVAR MINING CORP. LTD.

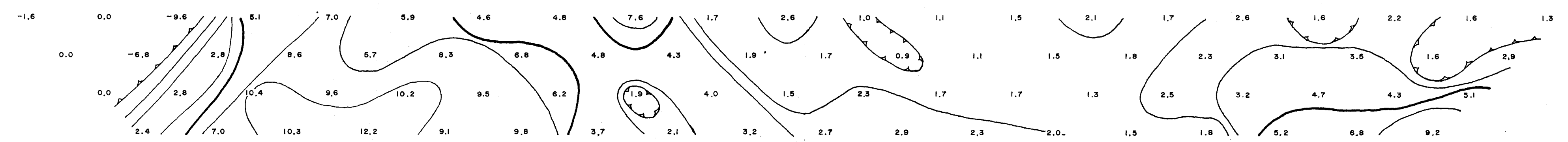
SMART RIVER AREA

LINE 64+00 N

SCALE 1"= 300'  
F.R.— 5 + 0.3 C/SEC.  
a=300'



F.E.



M.F.