

Report
17-8-1-38
Texaco

*Officer of
Copy*



The
IC
Line

MADE IN CANADA
4 EXPANDING ENVELOPE
has - 3 1/2 Inch Expansion

37-8-1-38

Texas

GEOPHYSICAL REPORT
of the
LABICHE (1970) PROJECT NO. 9425
PROVINCE OF B.C., Y.T., AND N.W.T.
CANADA



GEOPHYSICAL REPORT
OF THE
LABICHE (1970) PROJECT NO. 9425
PROVINCE OF B.C., Y.T., AND N.W.T.

CANADA

SEISMIC SURVEY
AND
GRAVITY SURVEY

CONDUCTED FROM MARCH 4, TO MARCH 19, 1970.

WORK WAS PERFORMED OVER P&NG LEASES
62-65, 66-R-65, 61-65, 65-R-65, 59-65, 64-R-65, 60-65

LOCATION LAT: 59°47'30" to 60°10'00"N.
LONG: 123°45'00" to 124°22'30"W.

QUADRANT: 94-N-16, 94-O-13

BY

TELEDYNE EXPLORATION LTD.

FOR

TEXACO EXPLORATION CANADA LTD.

Seismic 17-6-1-70-3
Project No. Gravity 17-8-1-70-4

Prepared by: A. K. Spence

C O N T E N T S

	<u>PAGE</u>
<u>PART I</u>	
Abstract -----	1
Locality Map -----	2
<u>PART II</u>	
Seismic Technical Information -----	3
Gravity Technical Information -----	6
<u>PART III</u>	
Seismic Results and Interpretation -----	7
Conclusions -----	9
<u>PART IV</u>	
Gravity Results and Interpretation -----	10
Conclusions -----	11
<u>PART V</u> In Envelope	
1 Shot Point Location Map -----	
1 Surface Elevation Map -----	
1 Mississippian Map	
1 Lower Mississippian Map	
1 Bouguer Gravity Map	
1 Residual Gravity Map	

PART I

ABSTRACT

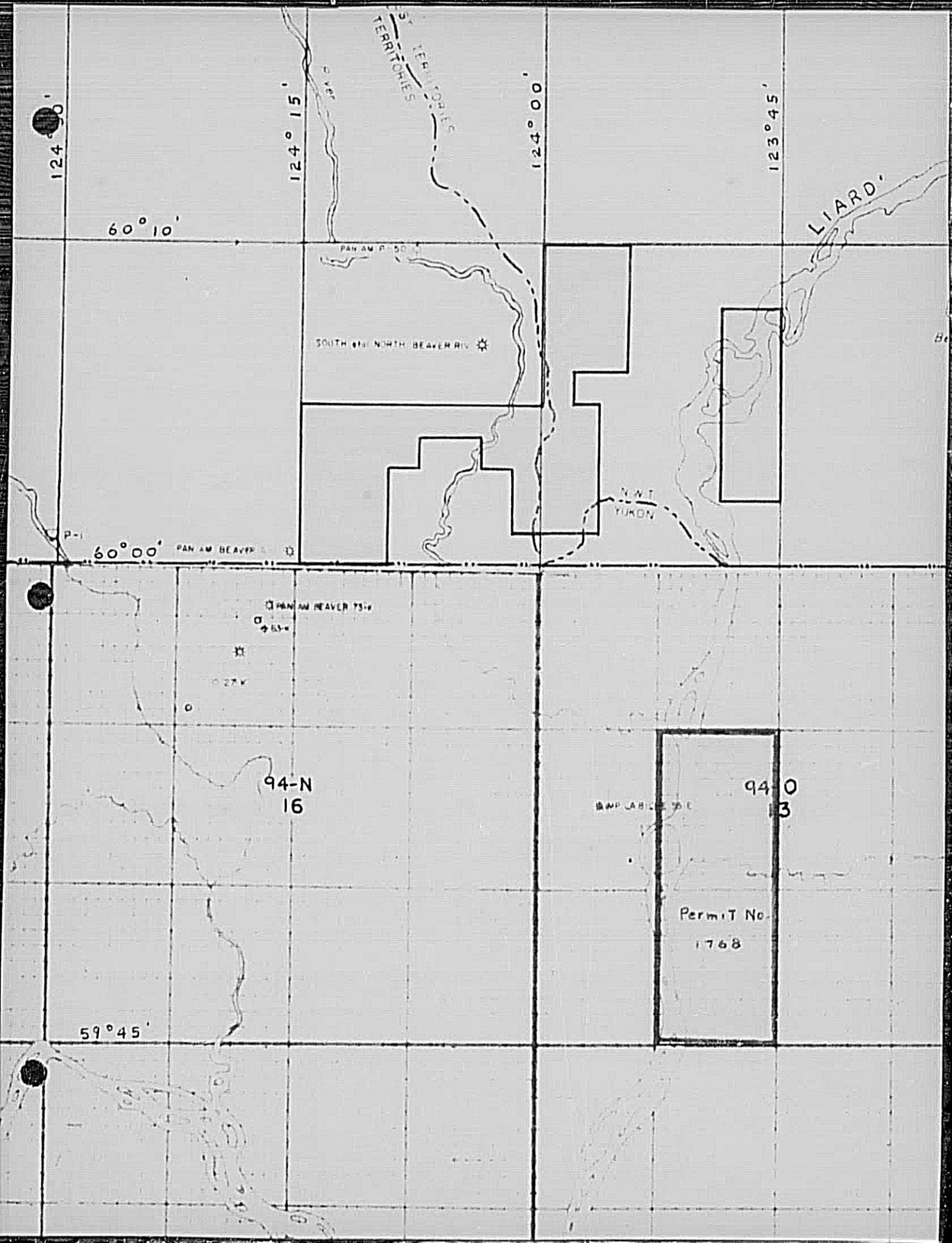
LOCALITY MAP

A B S T R A C T

The LaBiche (1970) Project straddles the British Columbia, Yukon, and Northwest Territories boundaries. It is located from $59^{\circ} 47' 30''$ to $60^{\circ} 10' 00''$ N. Latitude and from $123^{\circ} 45' 00''$ to $124^{\circ} 22' 30''$ W. Longitude.

The purpose of the survey was to obtain detailed information in areas of interest outlined by previous programs.

The seismic program was conducted from March 4 to March 19, 1970 and consisted of approximately 50 miles of digital, 12 CDP, 48 trace split spread control. The gravity data was metered at shotpoint stations at the time the seismic survey was conducted.



PART II

SEISMIC TECHNICAL INFORMATION

GRAVITY TECHNICAL INFORMATION

SEISMIC TECHNICAL INFORMATION

A. FIELD EQUIPMENT

Recording Unit	1
Shooting Unit	1
Survey Unit	1
Drill Units	6
Water Truck Units	5
Bulldozers	4
Line Vehicles	2
Trailer Units	5
Party Manager Unit	1
List of Drills	3 conventional, 1 combination air/water, 1 sewell Auger, 1 Top Drive Auger

B. PERSONNEL

Party Manager	1
Observer	1
Junior Observer	1
Shooter	1
Surveyor	1
Rodman	1
Bulldozer Operators	8
Drillers	6
Mechanic	1
Tool Pusher	1
Recording Crew Helpers	10

C. FIELD PROCEDURE

Coverage 1200% C.D.P.
Shot Point Separation 400'
Group Separation 200'
No. of Geophones per group 9
Shot Pattern 2 Holes 100' Apart In Line
Average Charge per hole 40#
Hole Depth 45' to 60'

D. RECORDING INSTRUMENTATION

Instrument TI 10,000 48 Trace OFS
Gain Mode Ganged Automatic
Average Gain Mode Rate 80 db/sec.
Average Final Gain 120 db
Average Trip Delay .300 sec.
Filter Settings High: 120 Hz Low: 17 Hz

E. PROCESSING

The data was processed by Geophysical Service Incorporated with:

Filter Time Variant 0-2500 15 to 45 Hz
1500-3500 10 to 45 Hz, 2500-5000 10 to 40Hz
Normal Moveout Corrections Applied

Time Varying Normalize Not Applied

Gather Applied

Stack Applied

Mix Not Applied

Deconvolution: Applied in time variant mode.

Data Quality:

Record quality varied from good to poor. The major portion of the recordings were considered to be in the fair to good range.

F. SURVEYING

A wild T-1A theodolite was the type of instrument used in the survey.

Survey originated from a Geodetic Boundary Movement on the border between British Columbia and the Northwest Territories. Bearings were established by Polaris Observations.

GRAVITY TECHNICAL INFORMATION

A. FIELD EQUIPMENT

Recording Unit: 1 (LaCoste Romberg Gravity Meter)

Survey Unit: 1

Party Manager Unit: N/A

Bulldozers: N/A

B. PERSONNEL

Party Manager N/A

Meter Operator 1

Surveyor 1

Rodman 1

Bulldozer Operator N/A

Mechanic N/A

C. FIELD PROCEDURE

Station Interval 400'

D. PROCESSING

Bouguer Corrections Applied ($K=0.0650$ mg1/ft.)

Free Air Corrections Applied

PART III

SEISMIC RESULTS AND INTERPRETATION

CONCLUSIONS

RESULTS AND INTERPRETATIONS

Record quality varies from poor to good on the Mississippian and Lower Mississippian events with only local areas having to be classified not useable. Reflection energy at Middle Devonian Carbonate level is generally not continuous, resulting in questionable correlations, and precludes a contoured map of this horizon.

The results of the LaBiche (1970) survey were incorporated with data from previous surveys. Generally speaking the new data tied satisfactorily with the older shooting.

The Mississippian and Lower Mississippian time structure map exhibit the same general configuration. Two major intersecting anticlinal features, the northeast/southwest trending Beaver River Anticline and the northwest/southeast trending Francois Anticline, dominate the mapped area. Two areas of interest have been evaluated along the Francois Anticline, while a third area of interest is located where the Francois and Beaver anticlines appear to converge. A brief discussion covering each area of interest follows.

The new control has given critical north dip to the anomaly centering in E/94-0-13. Although not fully delineated, this feature appears to have a crest approximately 3 1/2 miles long and 1/2 mile wide.

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The LaBiche (1970) control has confirmed north plunge on the feature located in sections 3 and 4 of grid 60° 10' 00" N. Latitude and 124° 00' 00" W. Longitude. The anomaly represents an interruption in the south plunging Francois anticline of about two miles in length, with a crest about one mile in width. The critical turnover is approximately 30 to 40 milliseconds at Mississippian level, with considerably greater turnover anticipated at Middle Devonian Carbonate level. Inasmuch as the feature is considerably downdip from the Canada South. N. Beaver I-27 shut-in gas well, this reversal is considered essential for a valid play.

The area of interest located at the juncture of the two anticline in the northwest part of the surveyed area, remains unchanged from the previous interpretation. A proposed program across the anomaly could not be obtained due to rugged terrain conditions. As currently mapped, this feature appears to have the same potential as the Beaver River Anticline with its large Devonian gas field.

C O N C L U S I O N S

The 1970 seismic program over the LaBiche Project upgraded the two anomalies previously interpreted on the Francois Anticline. As a result, both features along this trend have been made more prospective.

PART IV

GRAVITY RESULTS AND INTERPRETATION

CONCLUSIONS

GRAVITY RESULTS AND INTERPRETATION

The LaBiche 1970 Project gravity interpretation is based on a Bouguer Gravity Map and a Residual Gravity Map. In preparing the Residual Gravity Map, some difficulty was encountered in selecting a regional gradient, due to the extreme structural deformation in the area. However, the magnitude of the observed features indicate that any reasonable gradient can be used without seriously effecting the resultant residual.

The Beaver River anticline, located on the extreme western edge of the survey, has two 9.0 milligal residual gravity anomalies associated with it, separated by a narrow saddle. Insufficient control deprives the northernmost anomaly of good definition, although the data strongly suggests gravity closure.

Two widely separated gravity features dominate the Francois anticline, which trends in an almost north-south direction along the eastern edge of the surveyed area. The larger, and better controlled closure in the north, has a 4.0 milligal gravity response, while the open-ended feature in D/94-0-13 displays a 3.0 milligal gravity maximum.

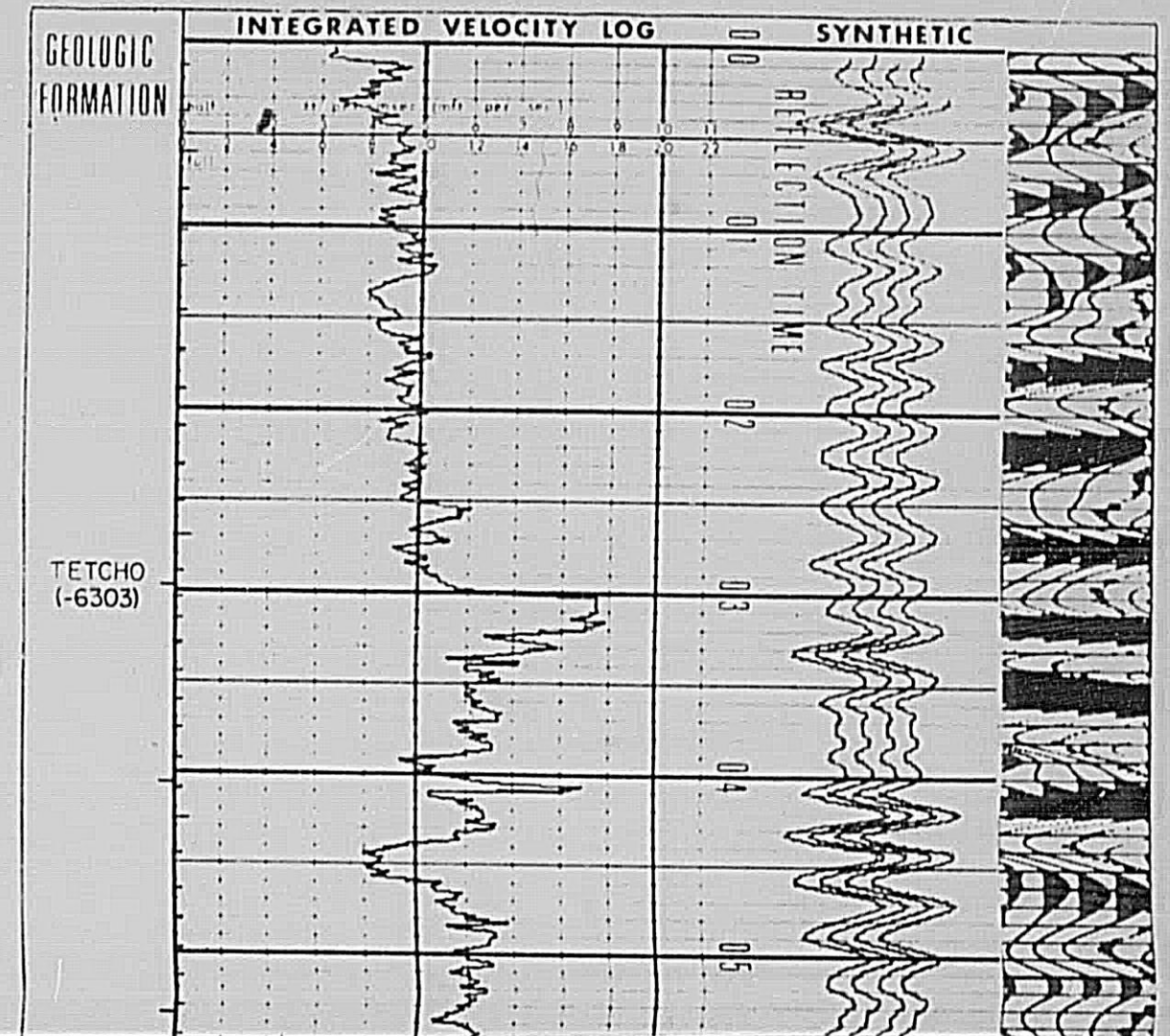
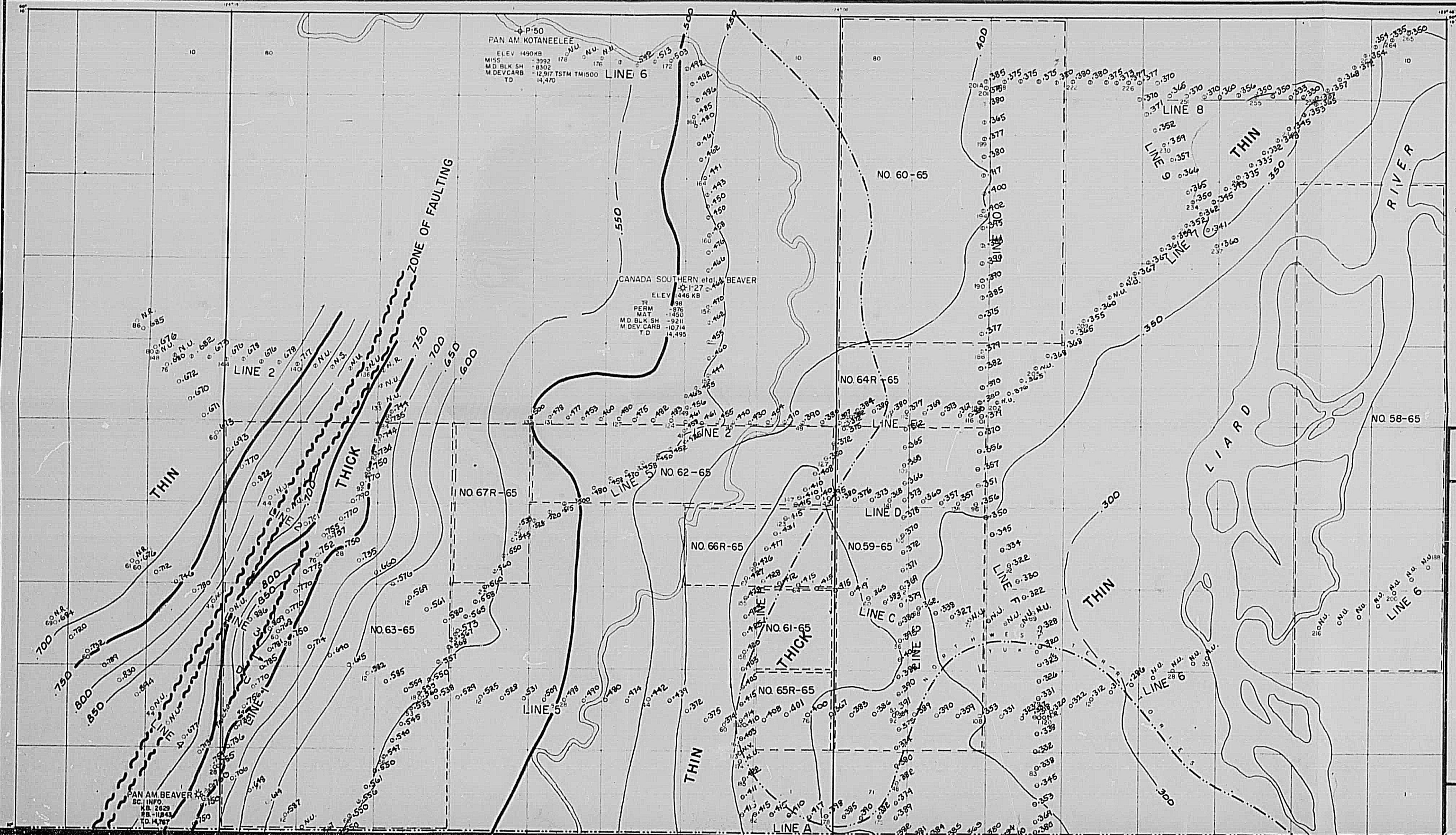
A low magnitude gravity anomaly has been evaluated in the south central part of the project, centering in the northwest corner of H/94-N-16. The contouring of the Residual Gravity Map suggests a relationship between this feature and the closure on the northern end of the Francois anticlinal fold. More

control would be needed to substantiate this alignment, which would effectively parallel the Beaver anticline.

The pronounced minimum located along Line 1 west, in the southeast corner of I/94-N-16, is believed to be the result of low density infill associated with the LaBiche River.

CONCLUSIONS

The structural configuration of the Beaver River anticline and the Francois anticline as evaluated on the Gravity Survey, strongly supports the seismic interpretation.



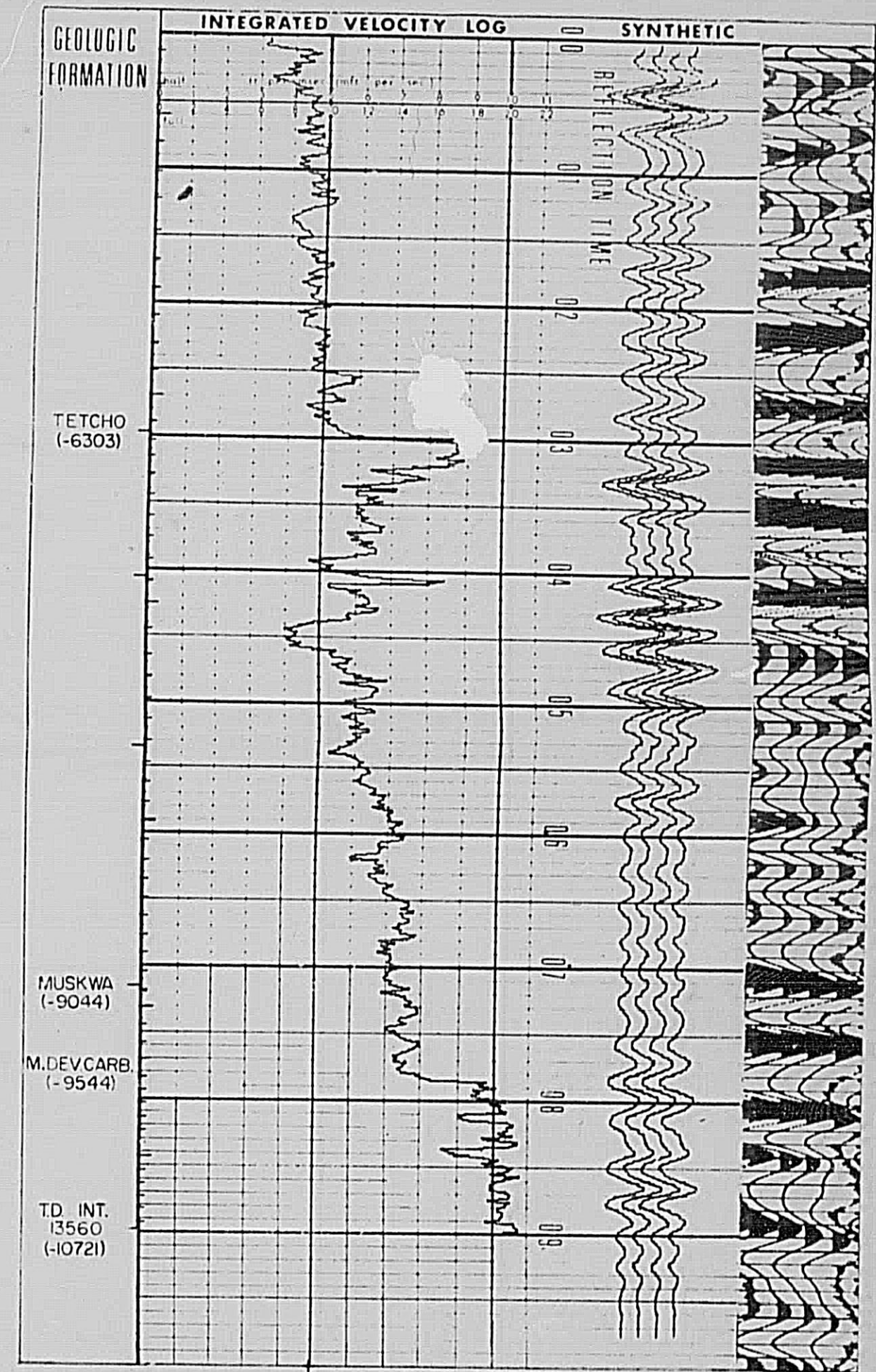
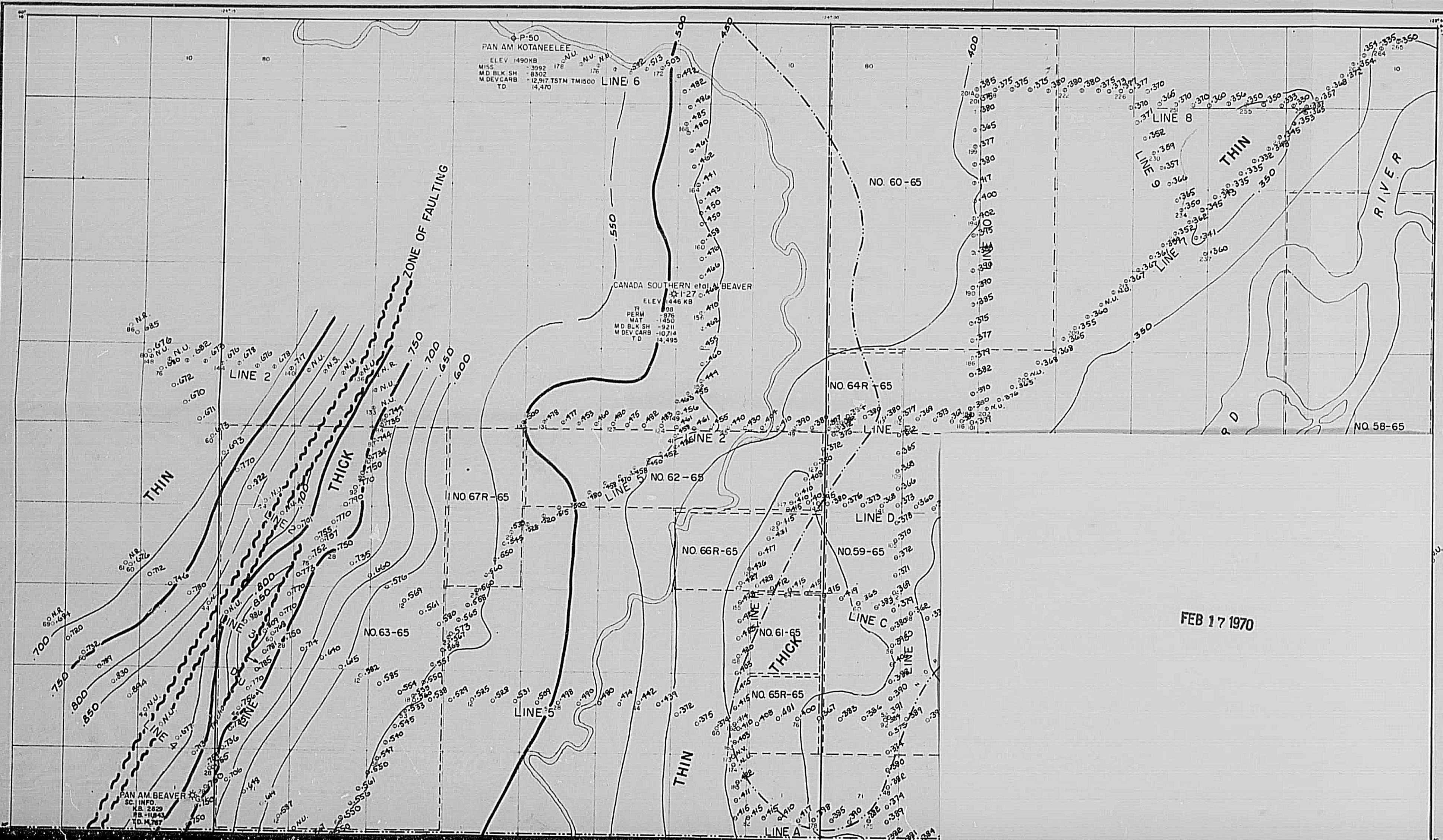
TEXACO EXPLORATION COMPANY
CALGARY ALBERTA CANADA

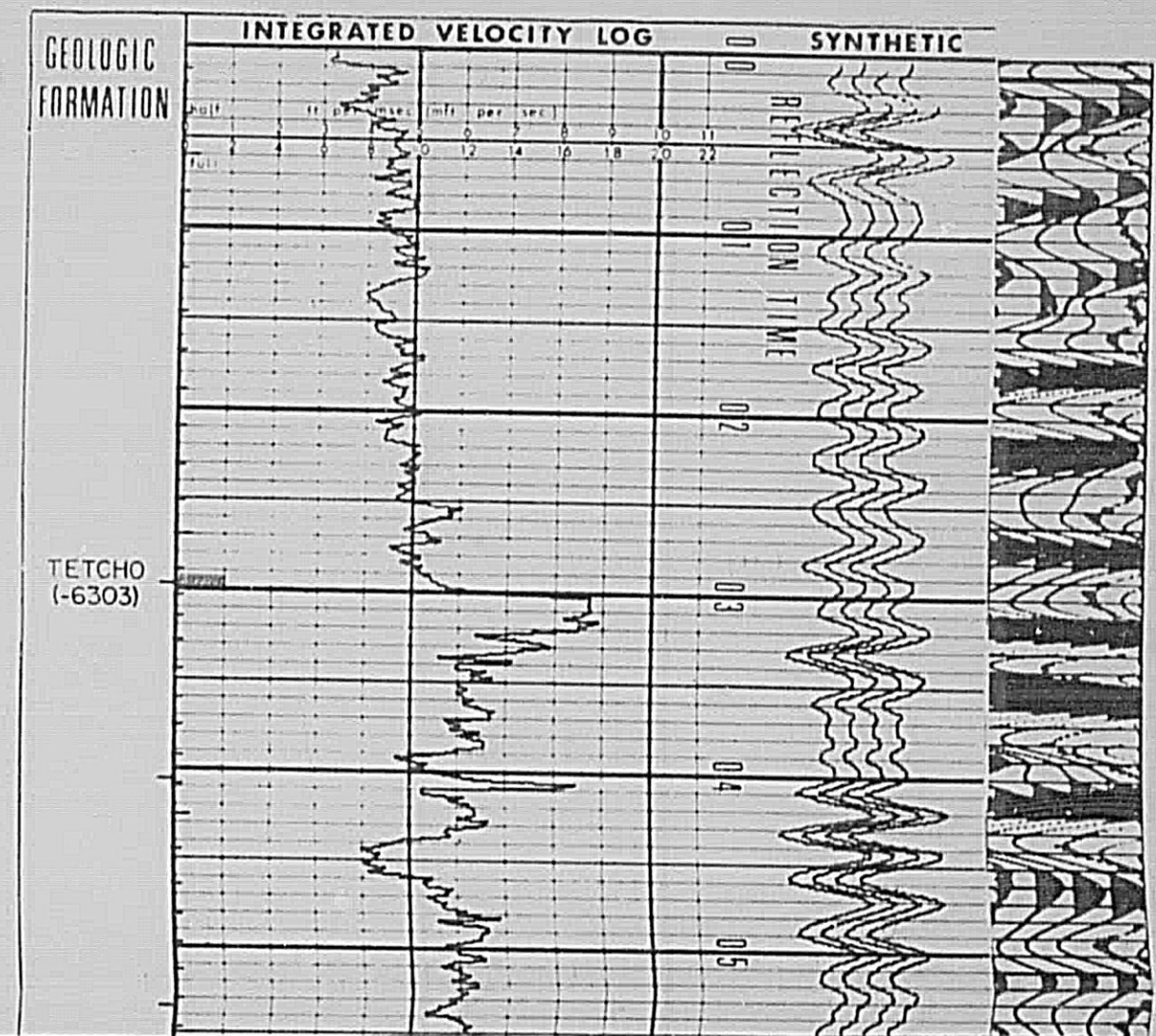
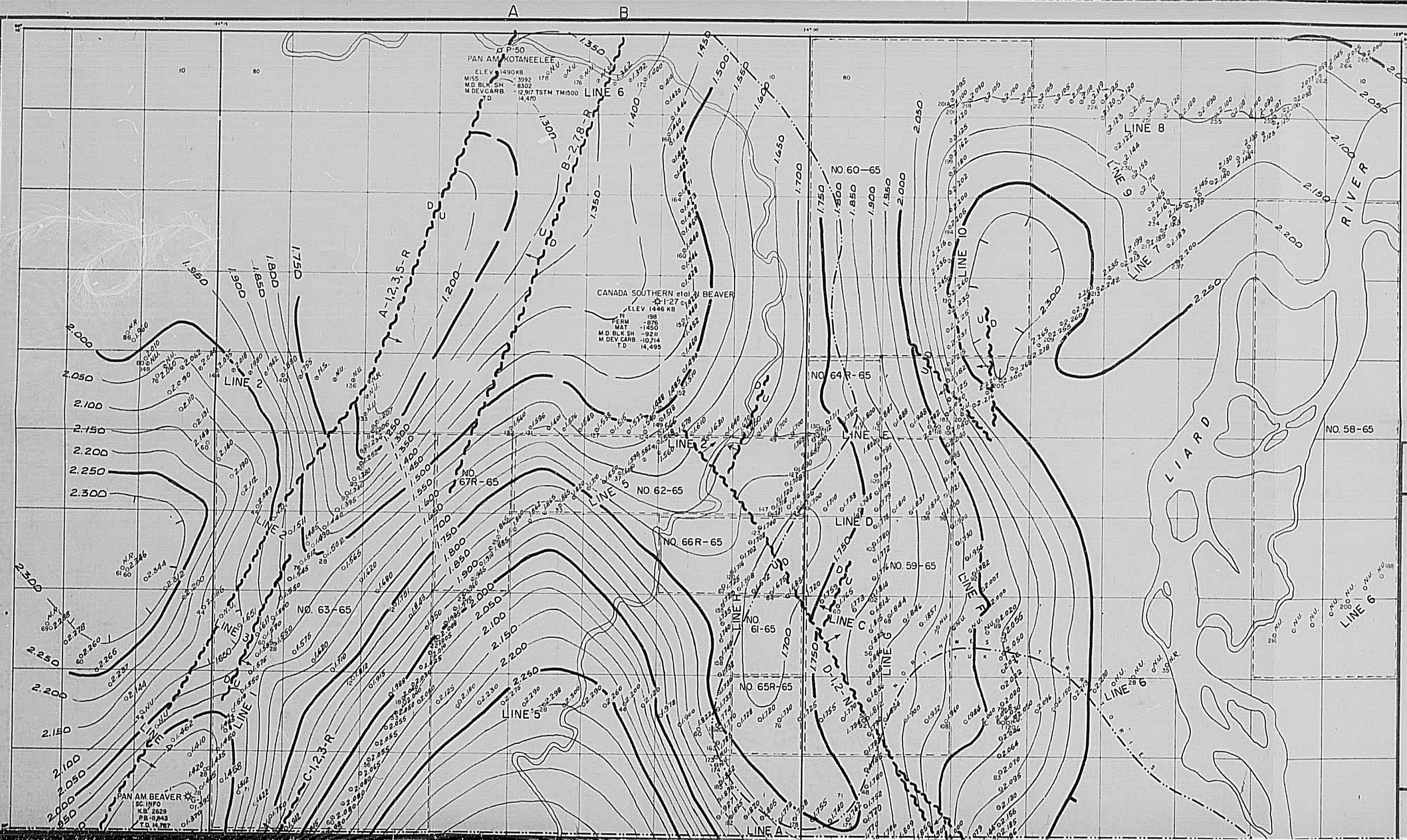
PROJECT MAP
LA BICHE (1969) PROJECT
YUKON, N.W.T. CANADA

ISOCHRON
MISSISSIPPIAN TO TETCHO

PREVIOUS PROJECT
CONTOUR INTERVAL: .050 SEC.
SCALE: 1 IN. = 1 ML.
DATUM:
DATE: NOVEMBER 24, 1969
Z. RUDOLF, INTERPRETATION
SEISMIC PARTY NO. 63
V.F. SCHUT, DIST. GEOPH.
R.H. WESTRA CO-ORD. GEOL.

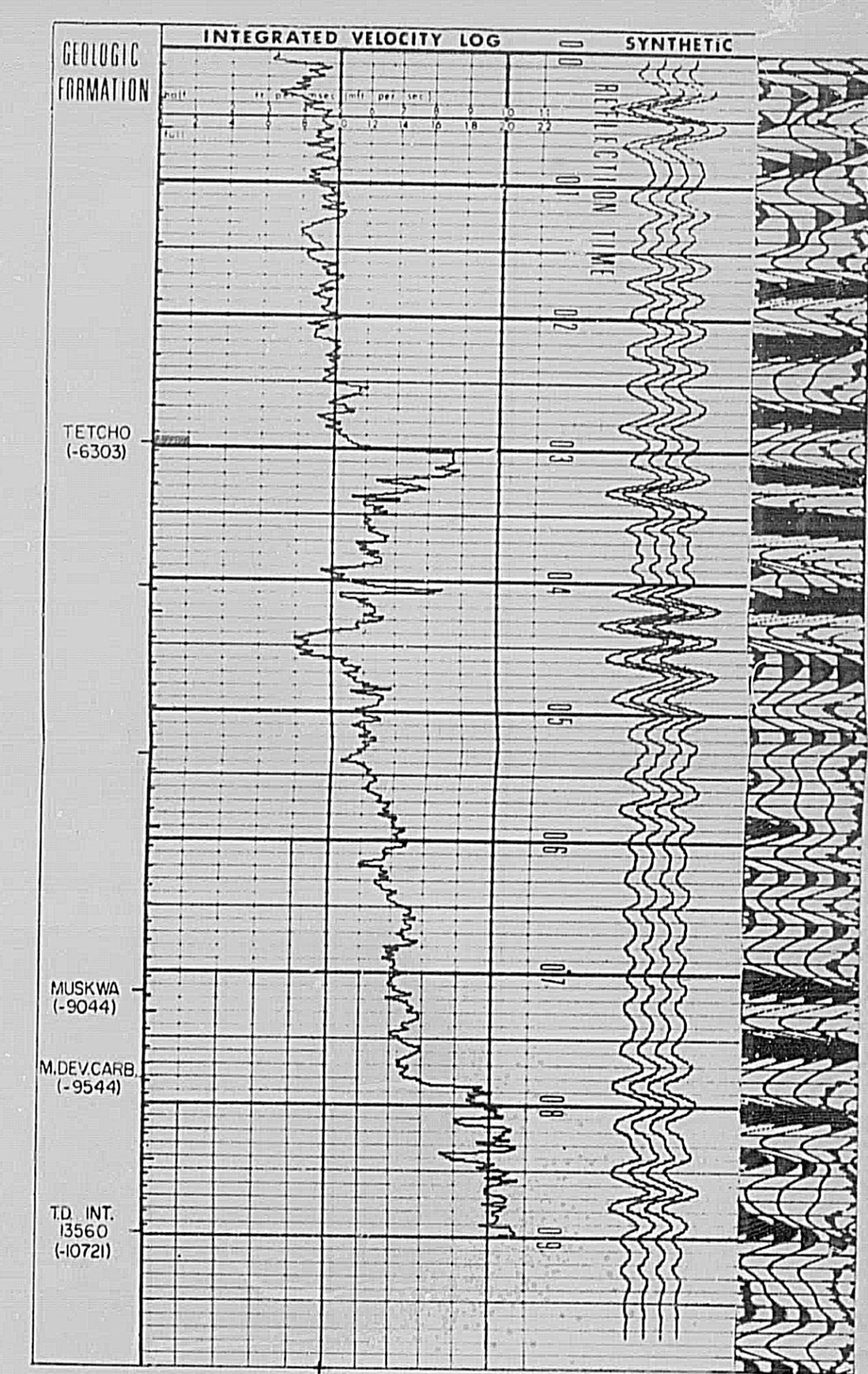
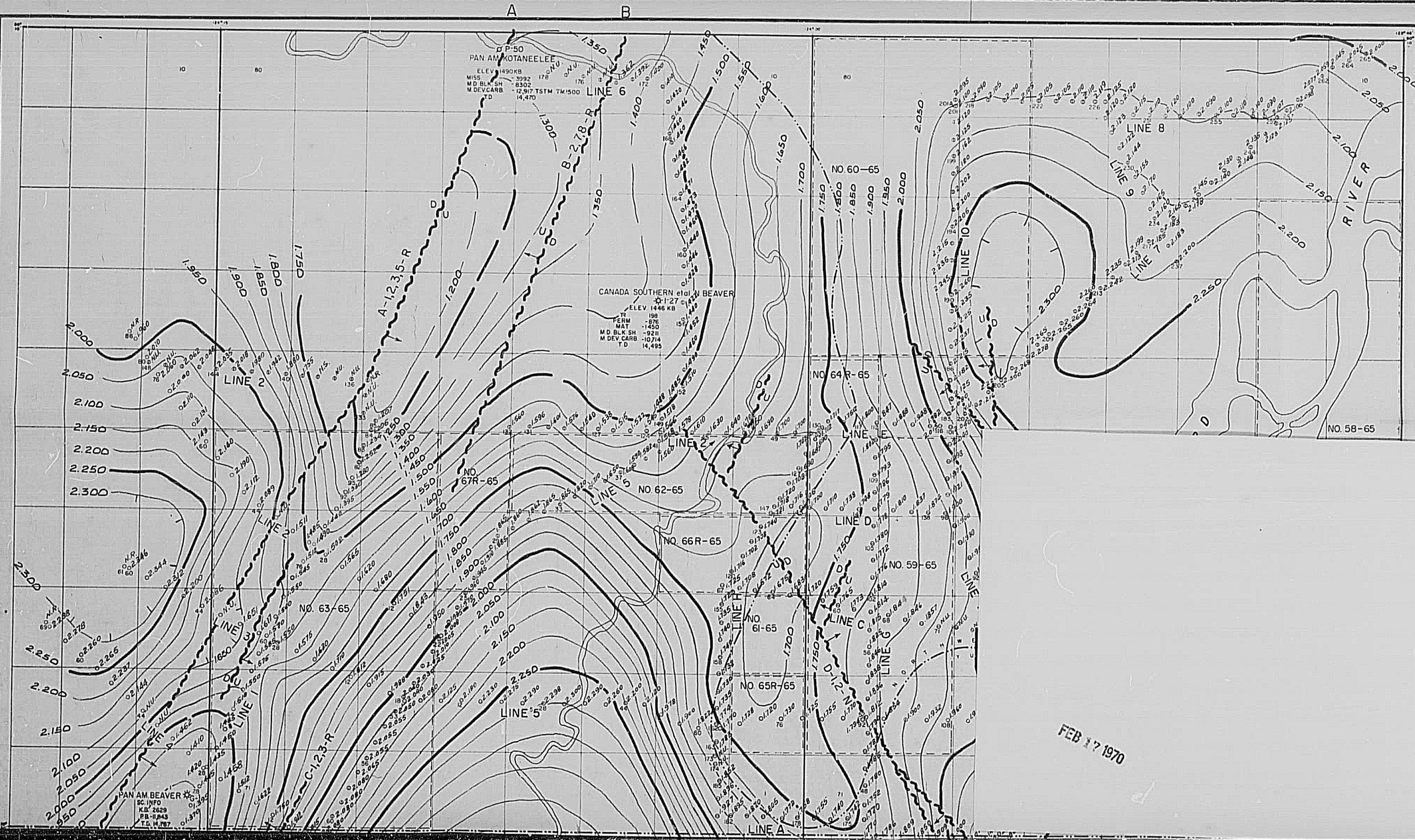
GEOPHYSICAL SERVICE INC.



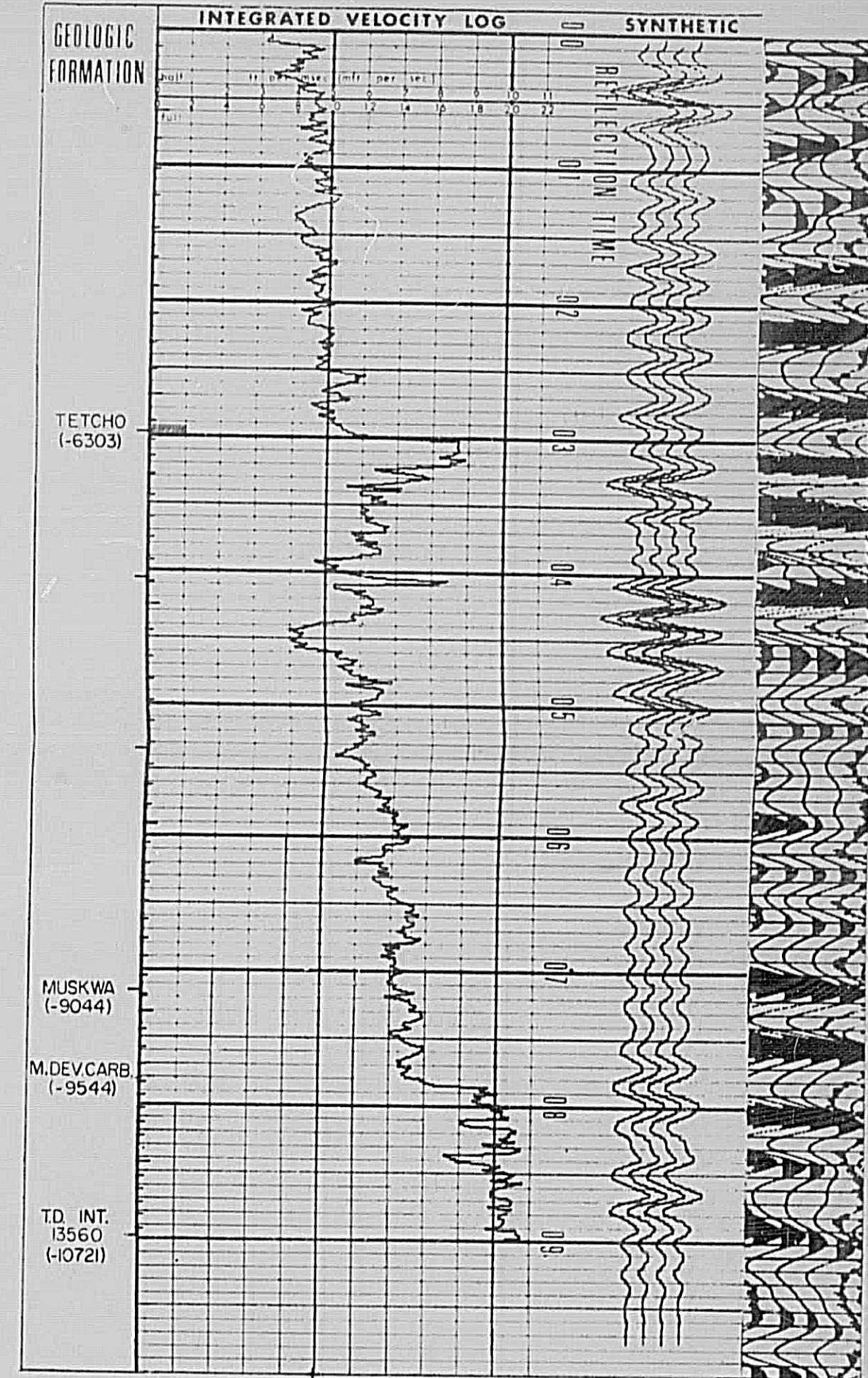
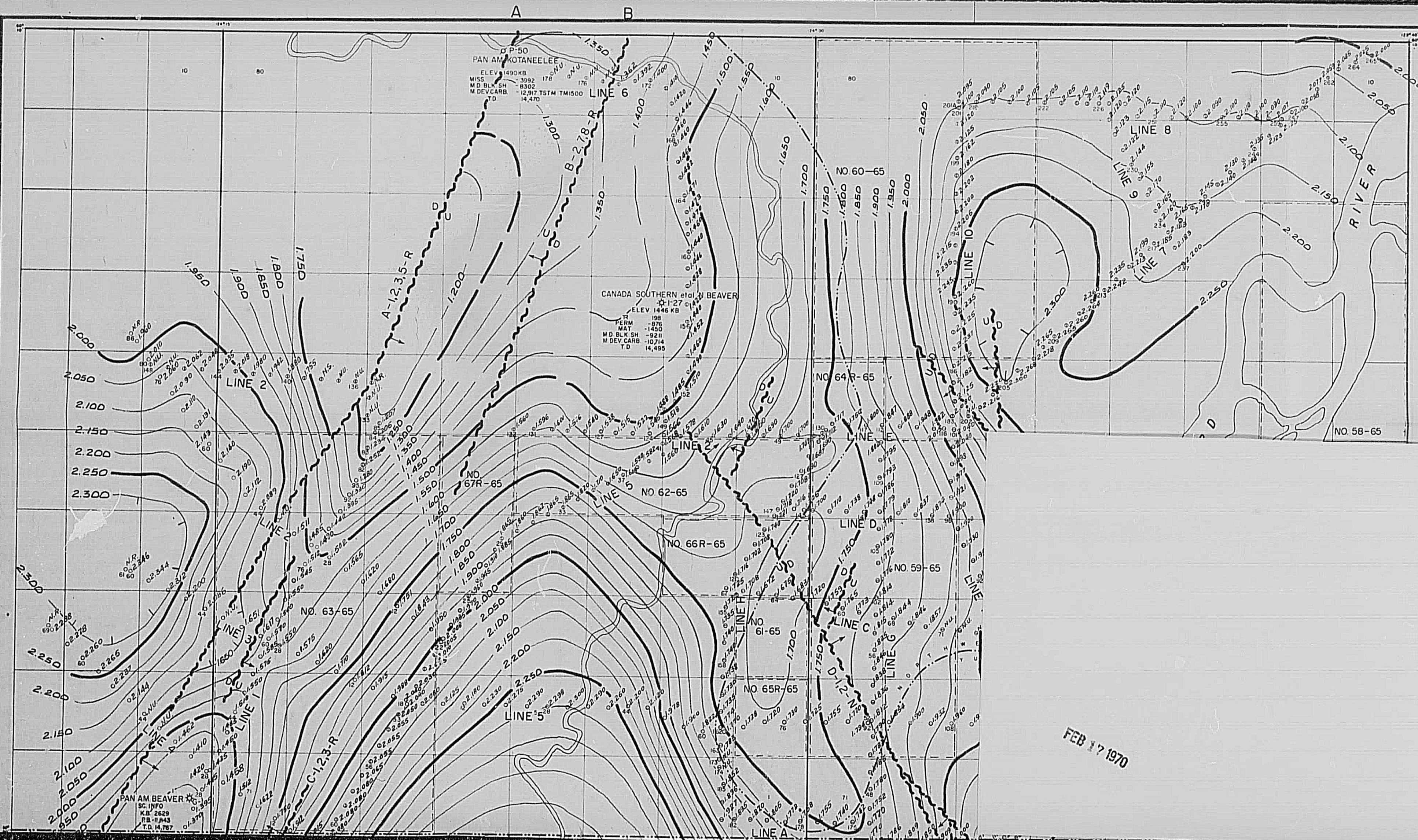


TEXACO EXPLORATION COMPANY
 CALGARY ALBERTA CANADA
 PROJECT MAP
LA BICHE (1969) PROJECT
 YUKON, N.W.T. CANADA
TETCHO
 • PREVIOUS PROJECT
 CONTOUR INTERVAL : .050 SEC.
 SCALE : 1 IN. = 1 ML.
 DATUM : +1500 FT.
 DATE : NOVEMBER 24, 1969
 Z. RUDOLF, INTERPRETATION
 SEISMIC PARTY NO. 63
 V.F. SCHUT, DIST. GEOPH.
 R.H. WESTRA CO-ORD. GEOL.

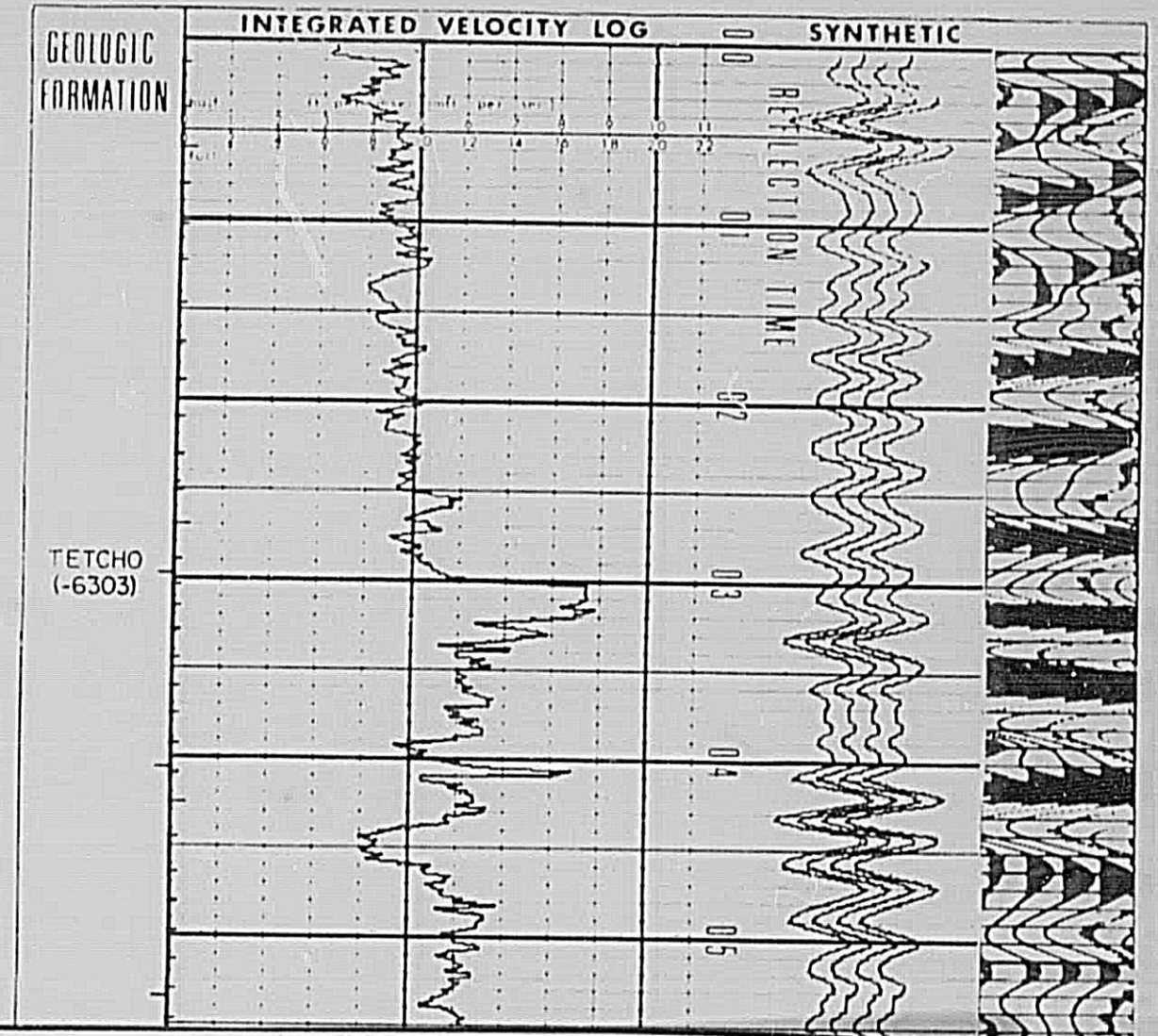
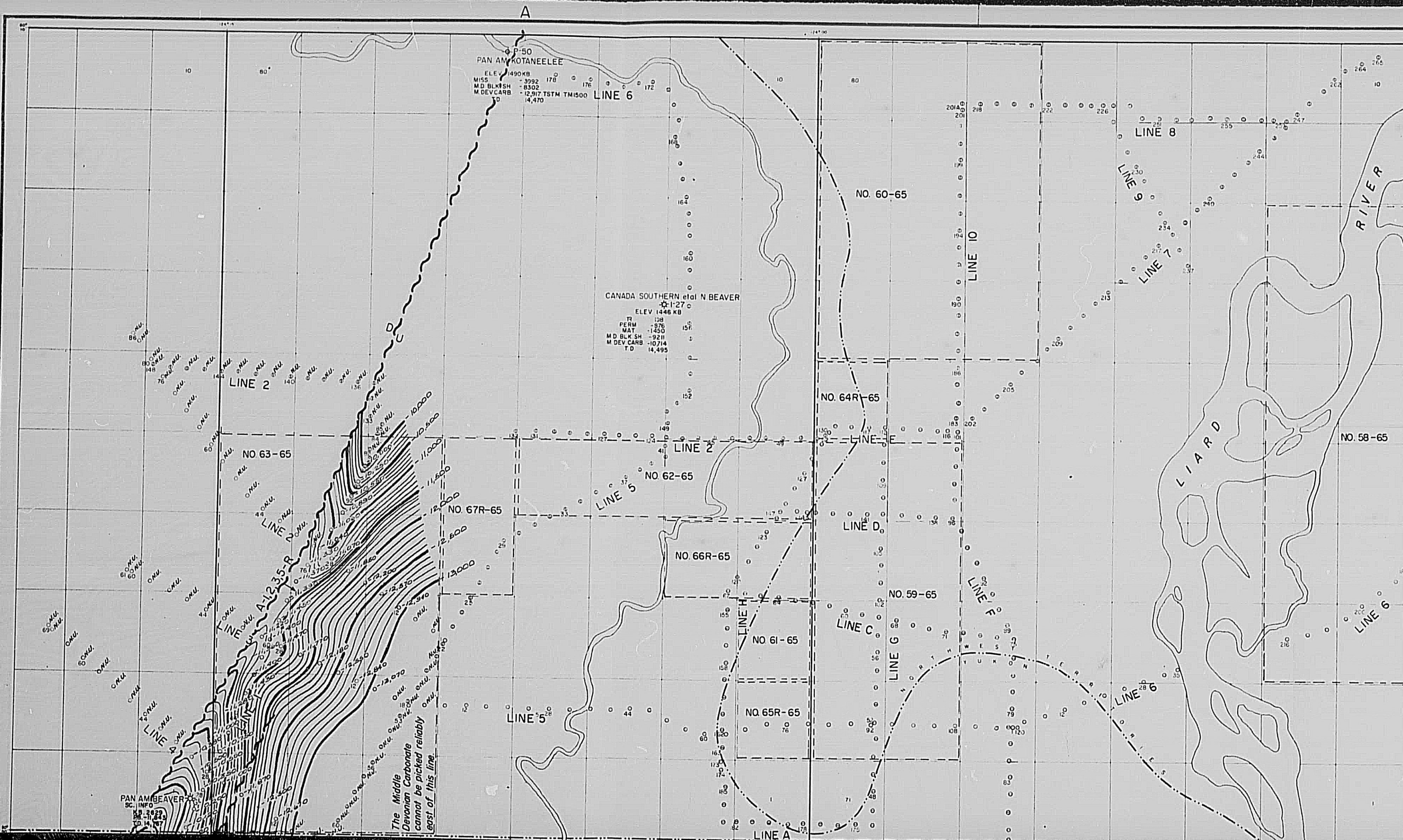
GEOPHYSICAL SERVICE INC.



PAN AM, A-2 BEAVER RIVER d-73-K



PAN AM, A-2 BEAVER RIVER d-73-K



TEXACO EXPLORATION COMPANY
 CALGARY ALBERTA CANADA

PROJECT MAP
LA BICHE (1969) PROJECT
 YUKON, N.W.T. CANADA

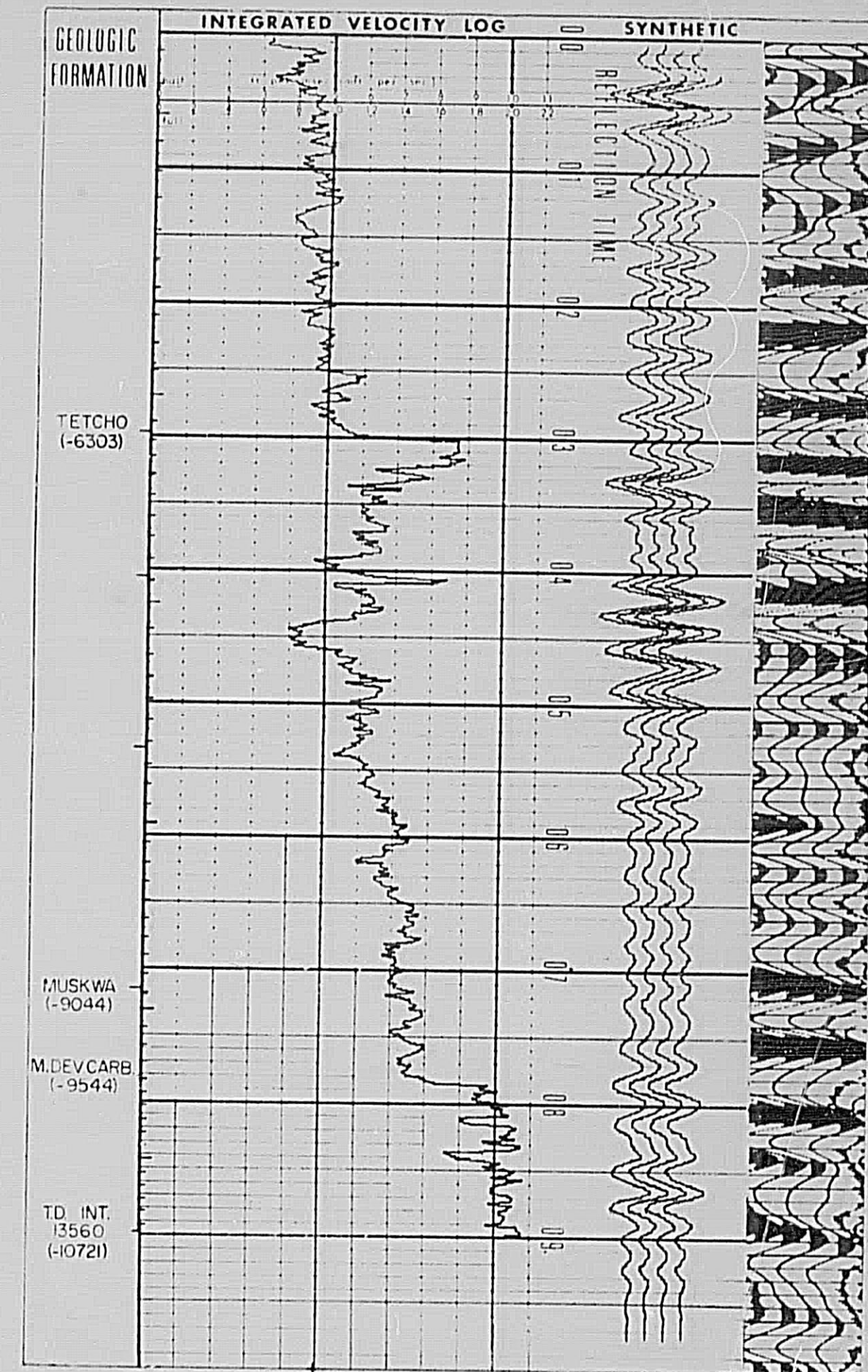
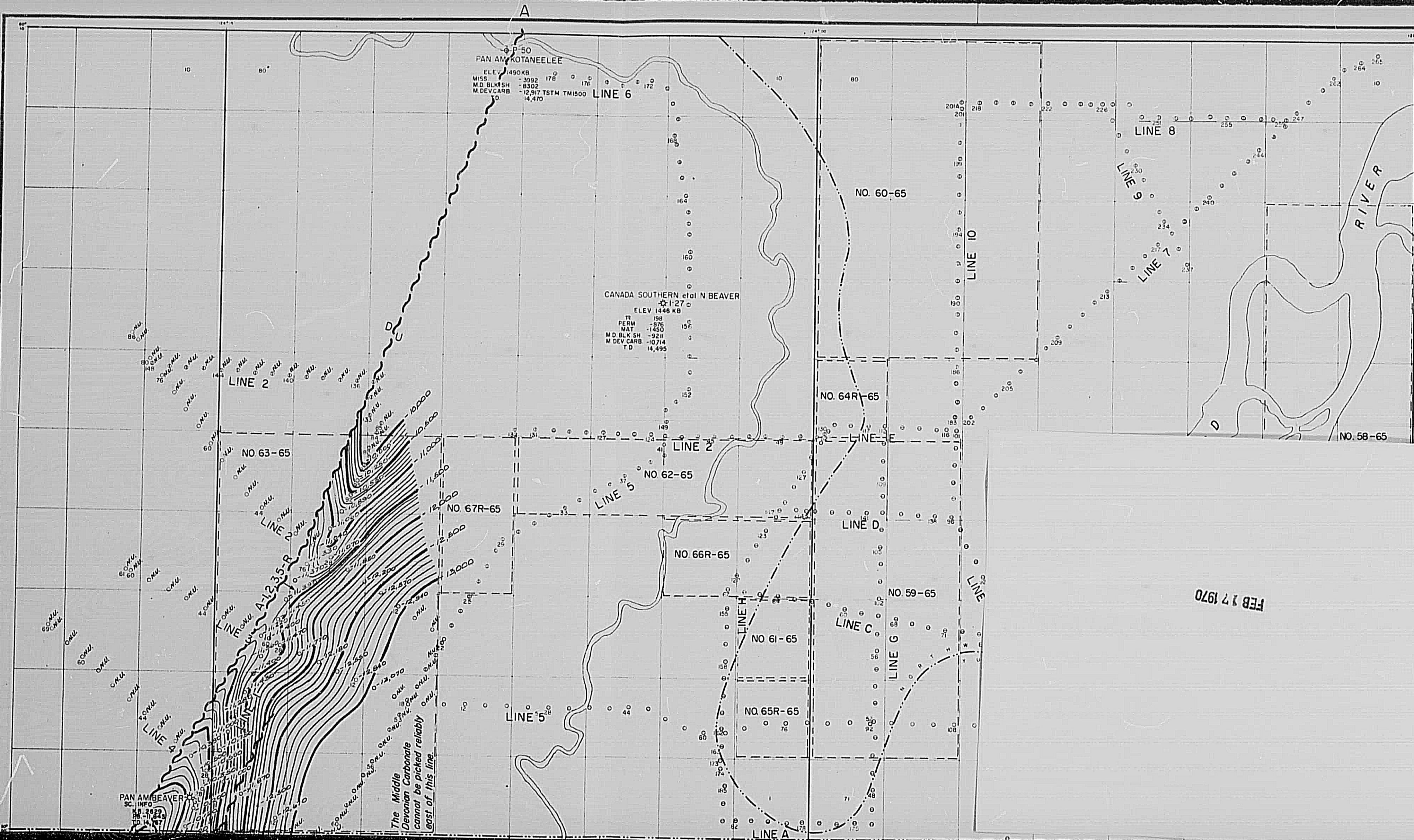
MIDDLE DEVONIAN CARBONATE

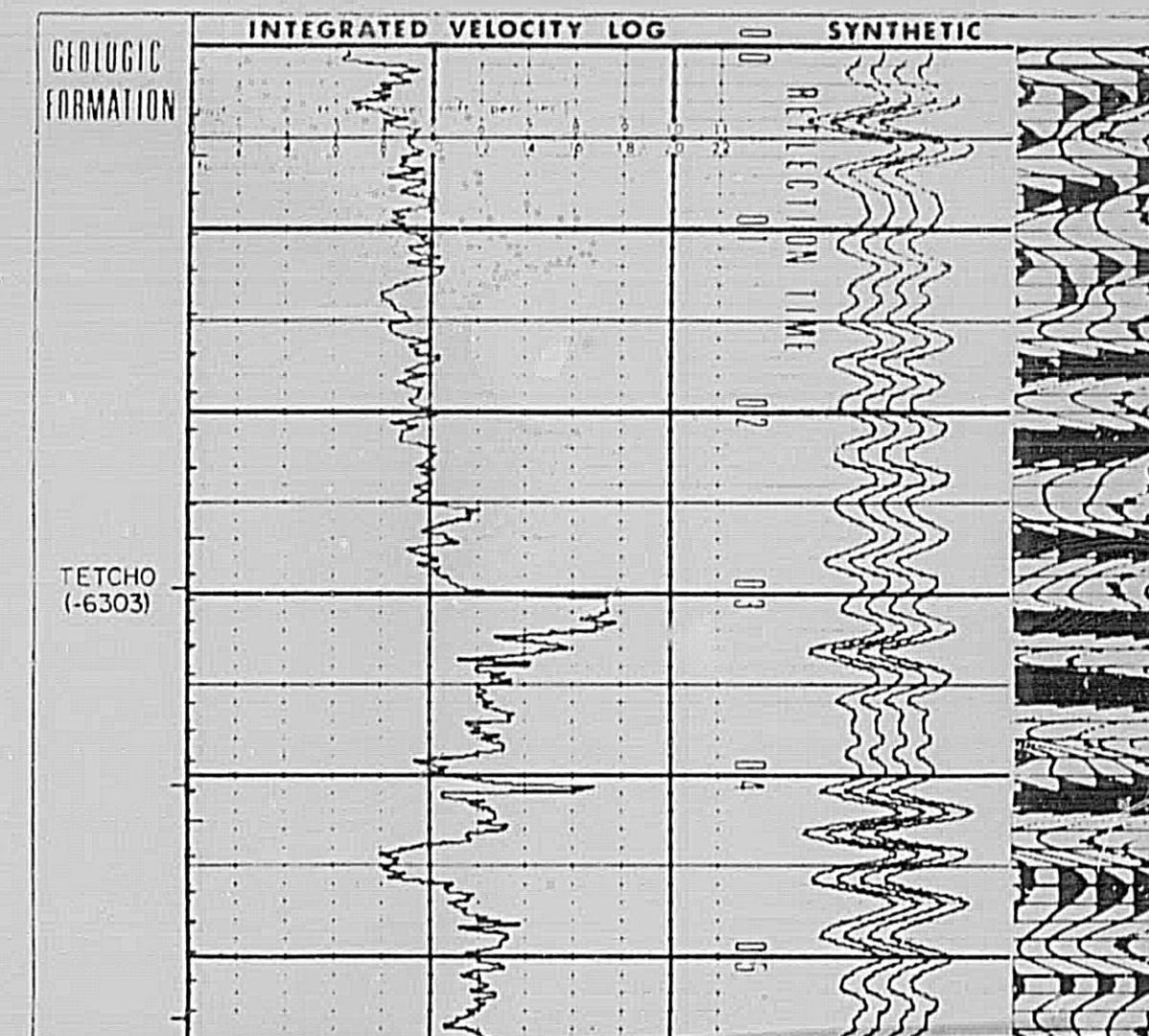
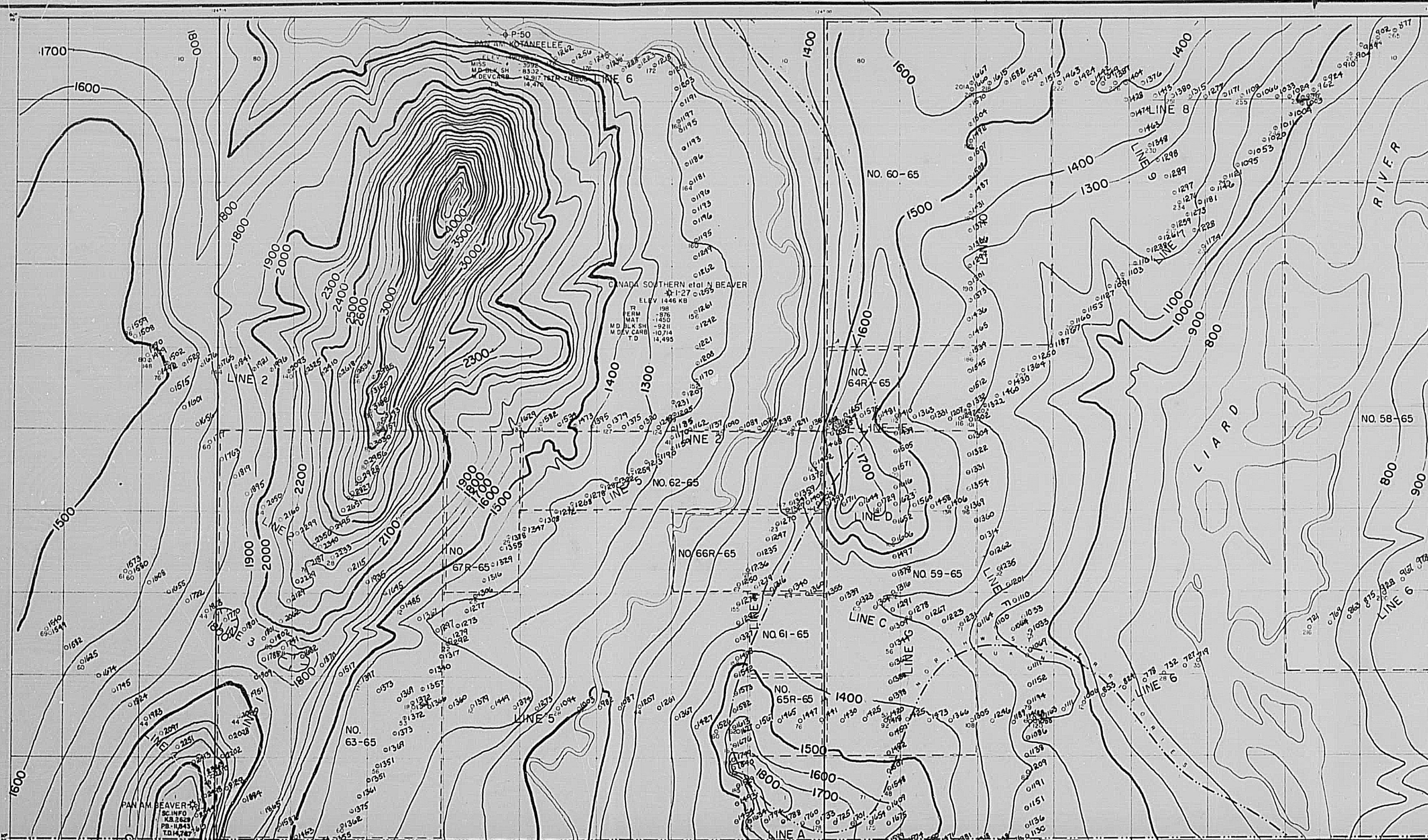
● PREVIOUS PROJECT

CONTOUR INTERVAL: 100 FT.
 SCALE: 1 IN. = 1 MI.
 DATUM: SEA LEVEL
 DATE: NOVEMBER 24, 1969

Z. RUDOLF, INTERPRETATION
 SEISMIC PARTY NO. 63
 V.F. SCHUT, DIST. GEOPH.
 R.H. WESTRA CO-ORD. GEOL.

GEOPHYSICAL SERVICE INC.





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EXPLORATION

ALBERTA

COMPANY

CANADA

PROJECT MAP

LA BICHE (1969) PROJECT

YUKON, N. W. T.

CANADA

ELEVATION

• PREVIOUS PROJECT

CONTOUR INTERVAL : 100 FT.

SCALE : 1 IN. = 1 ML.

DATUM : SEA LEVEL

DATE : NOVEMBER 24, 1969

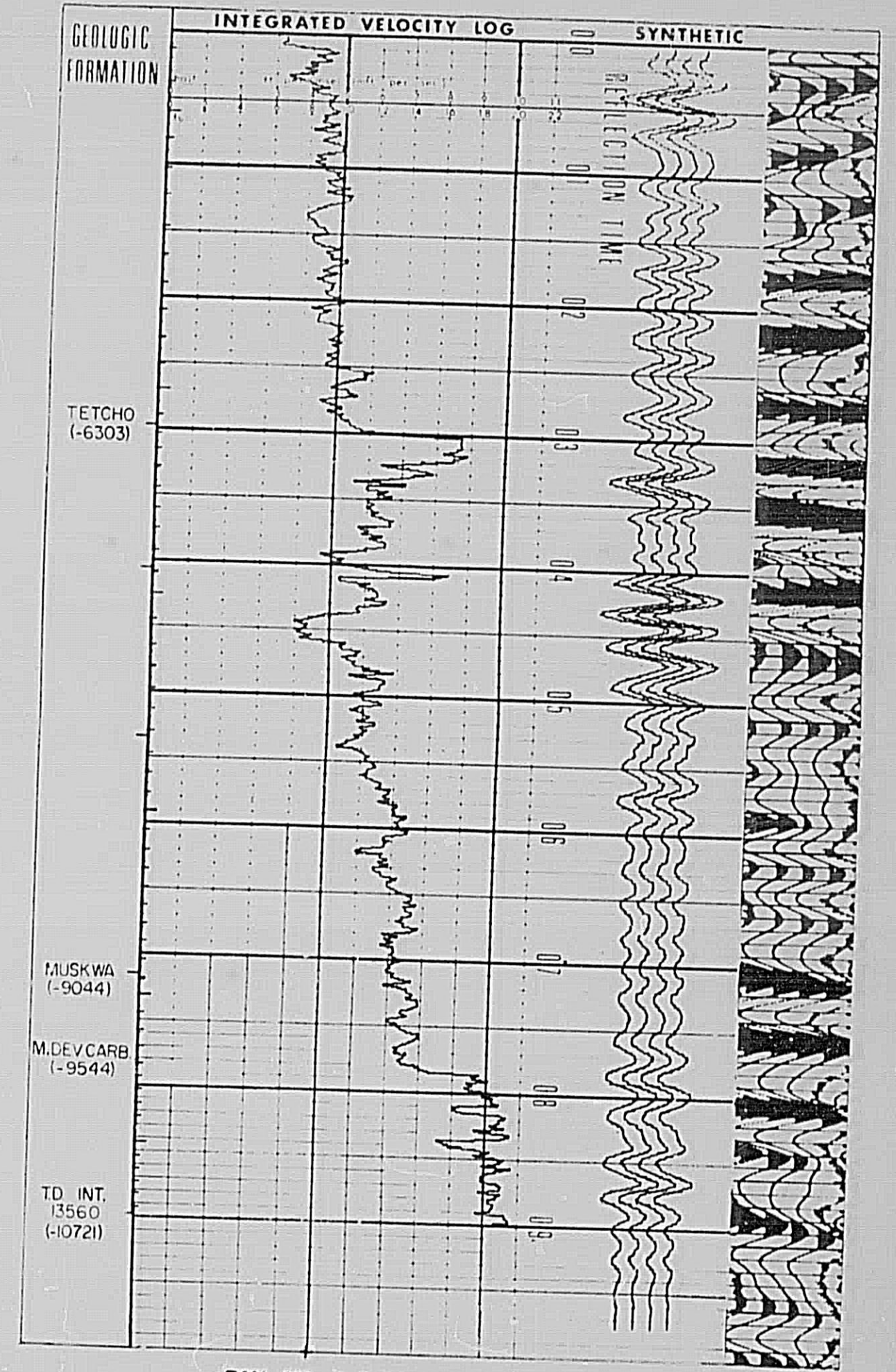
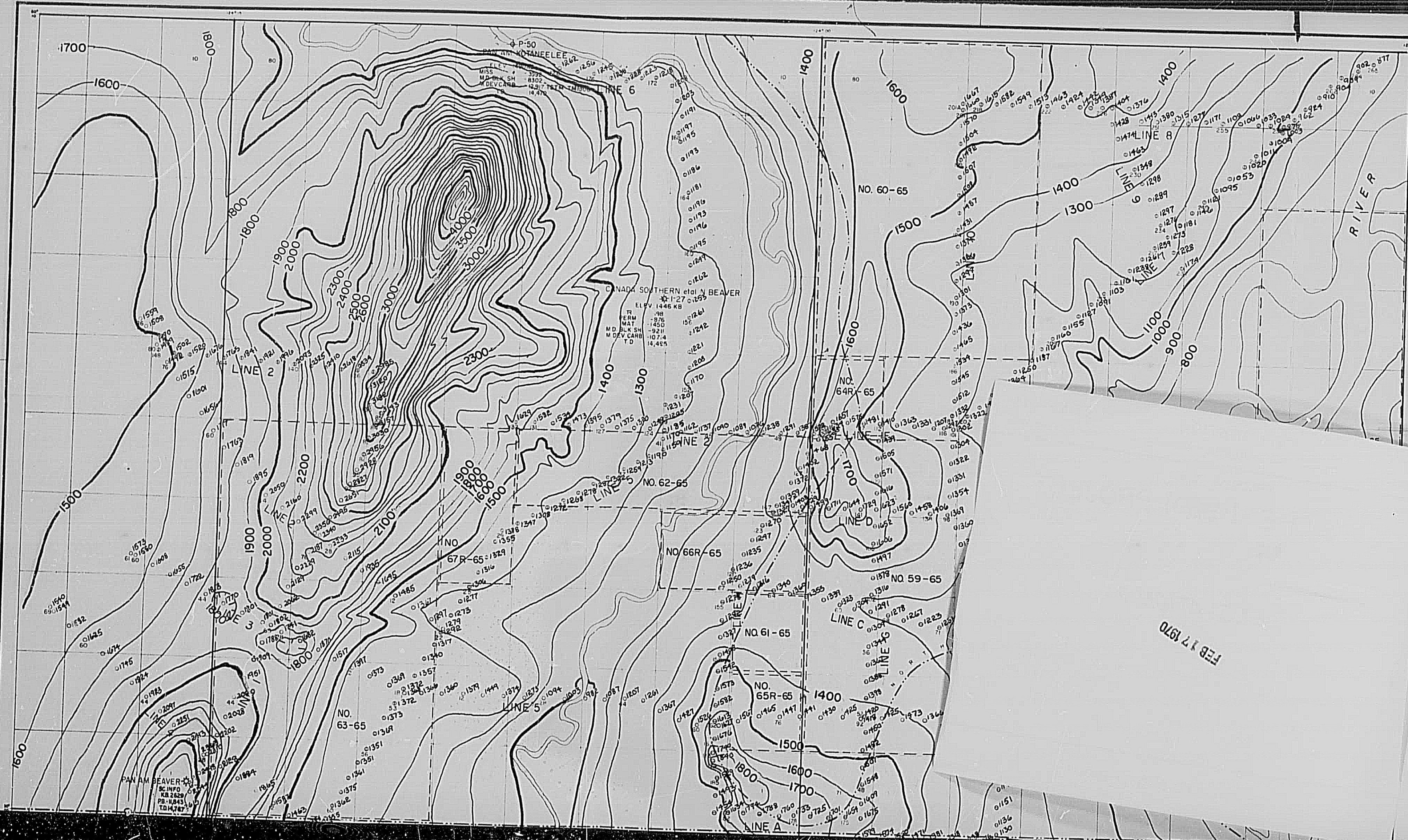
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SEISMIC PARTY NO. 63

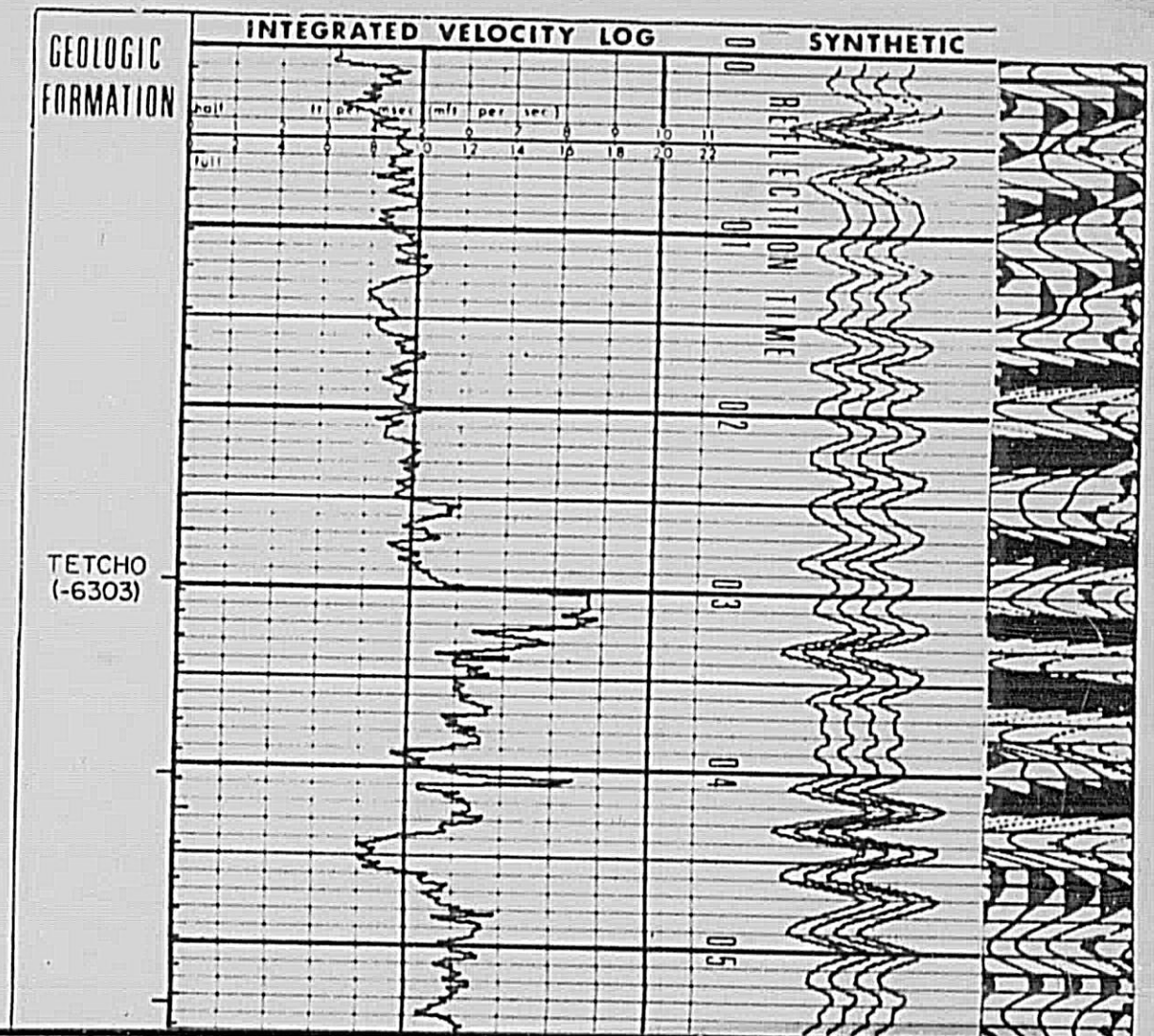
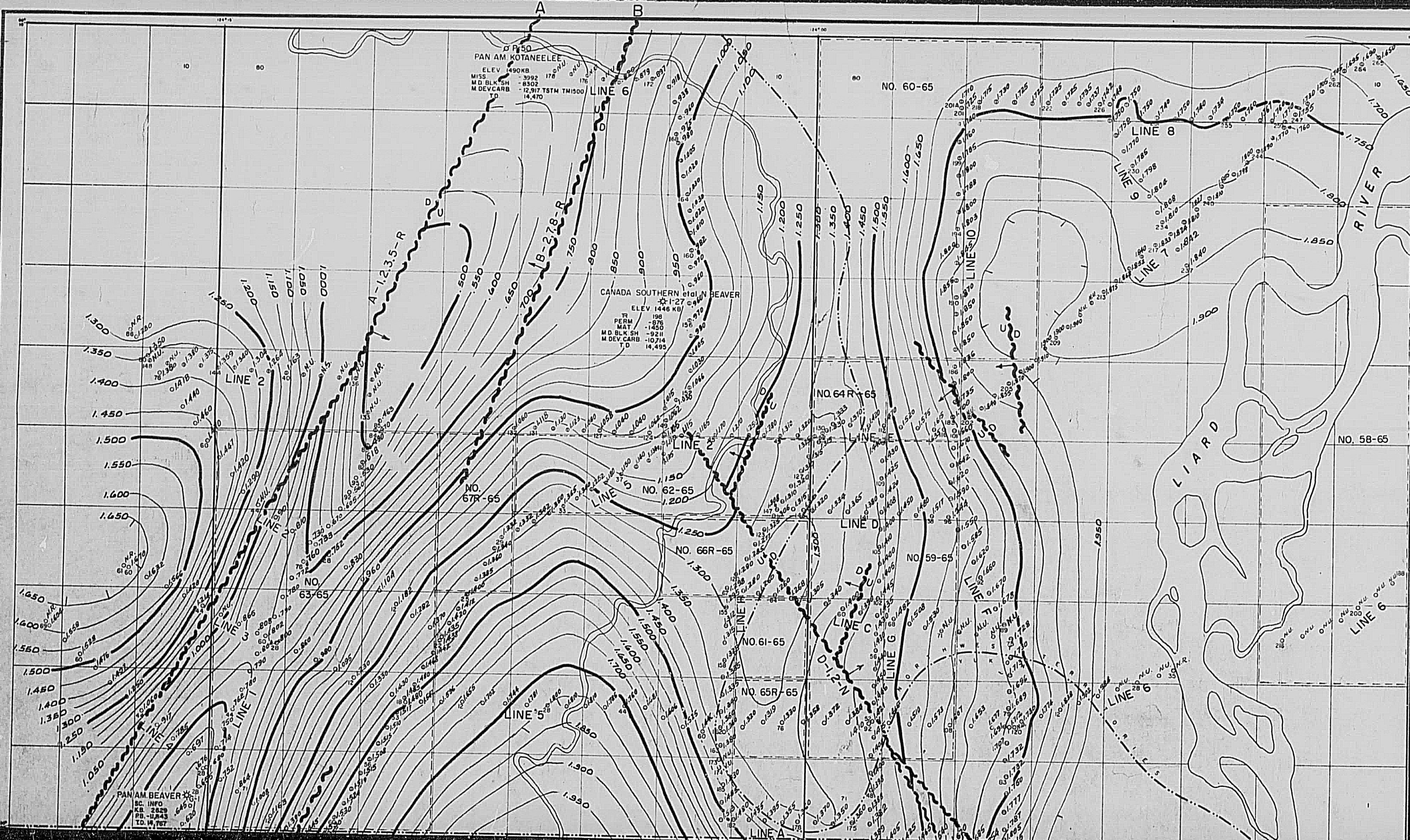
V.F. SCHUT, DIST. GEOPH.

R.H. WESTRA CO-ORD. GEOL.

GEOPHYSICAL SERVICE INC.



PAN AM A-2 BEAVER RIVER d-73-K



TEXACO

EXPLORATION

COMPANY

CALGARY

ALBERTA

CANADA

PROJECT MAP

LA BICHE (1969) PROJECT

YUKON, N. W. T.

CANADA

MISSISSIPPIAN

• PREVIOUS PROJECT

CONTOUR INTERVAL : .050 SEC.

SCALE : 1 IN. = 1 ML.

DATUM : +1500 FT.

DATE : NOVEMBER 24, 1969

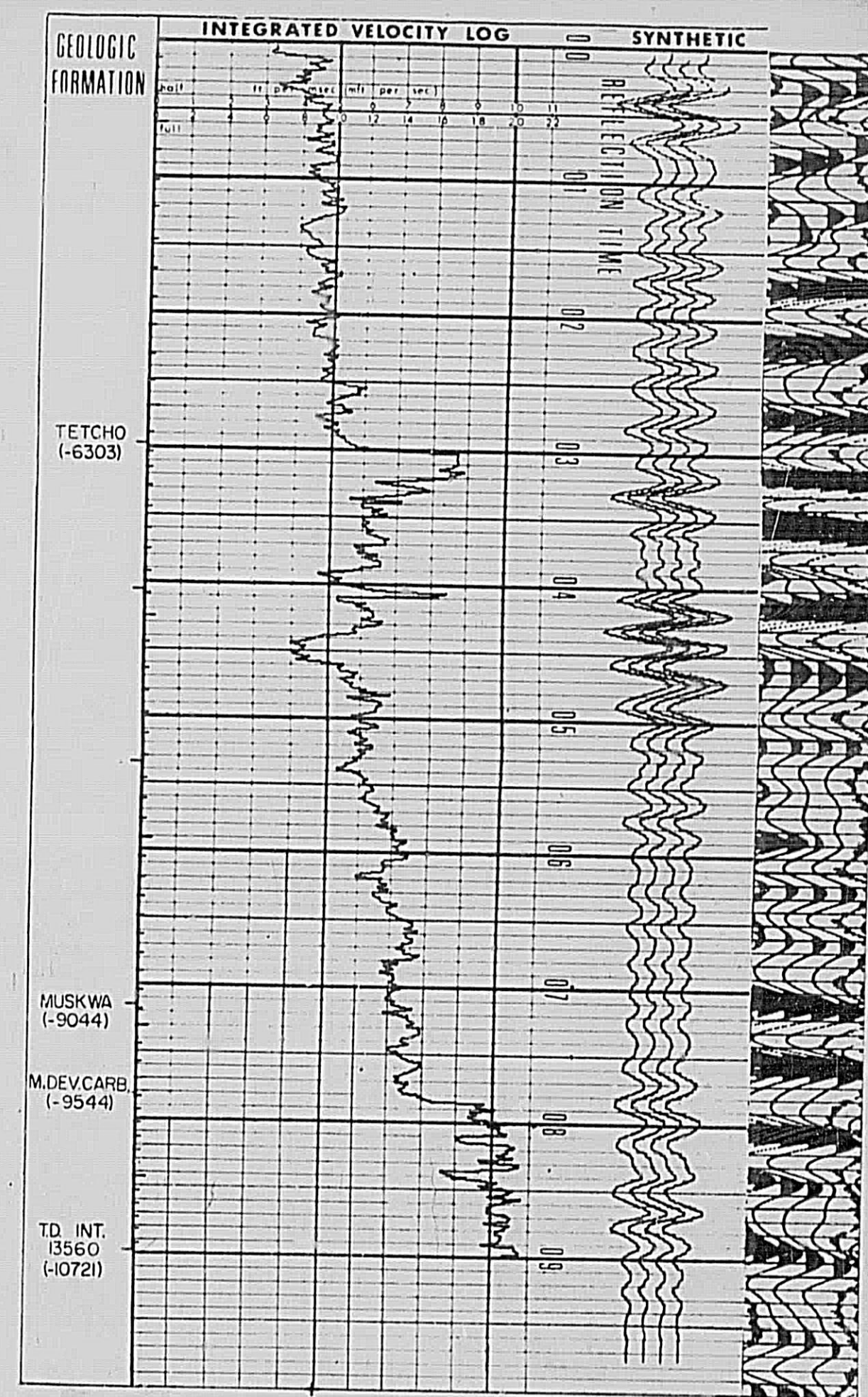
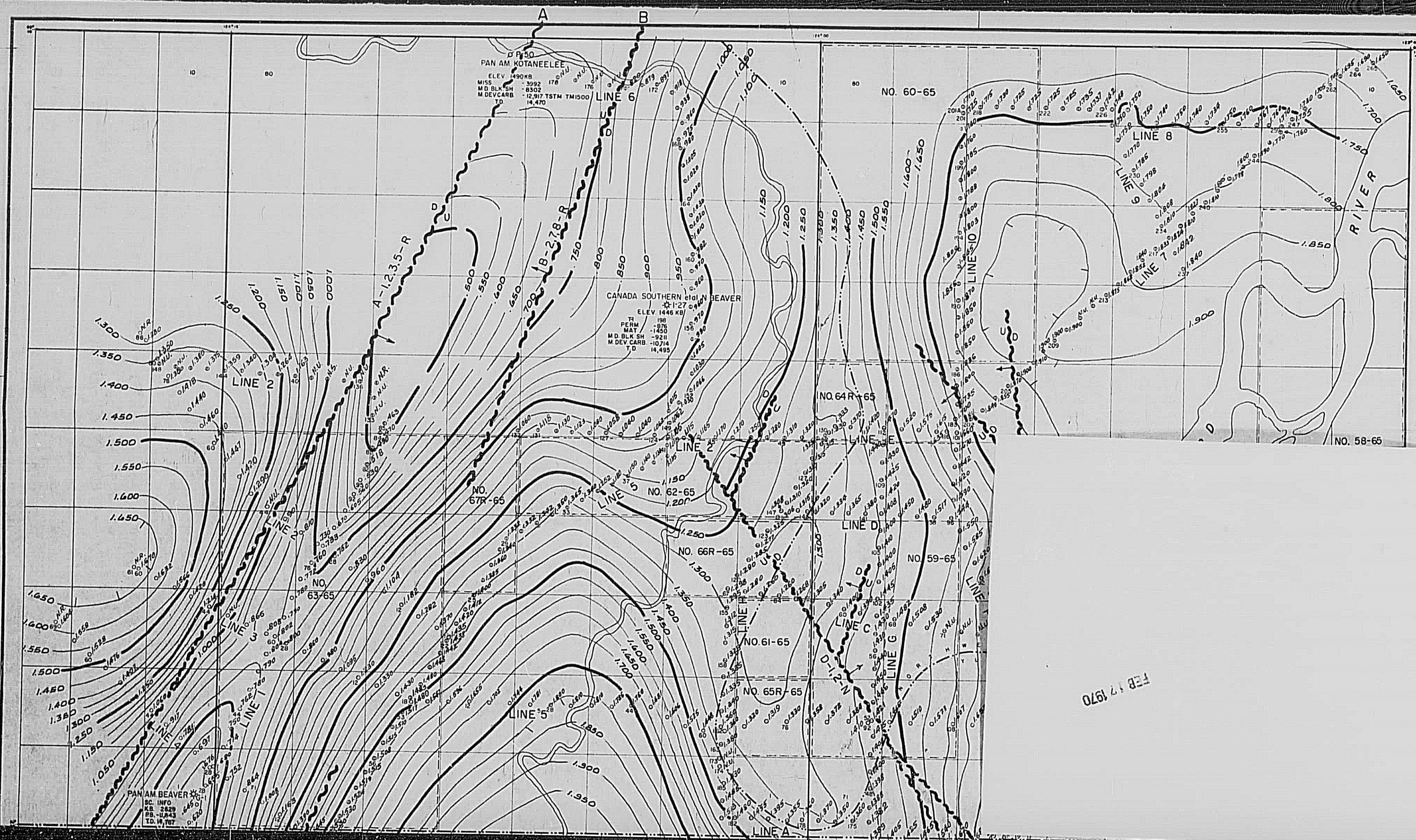
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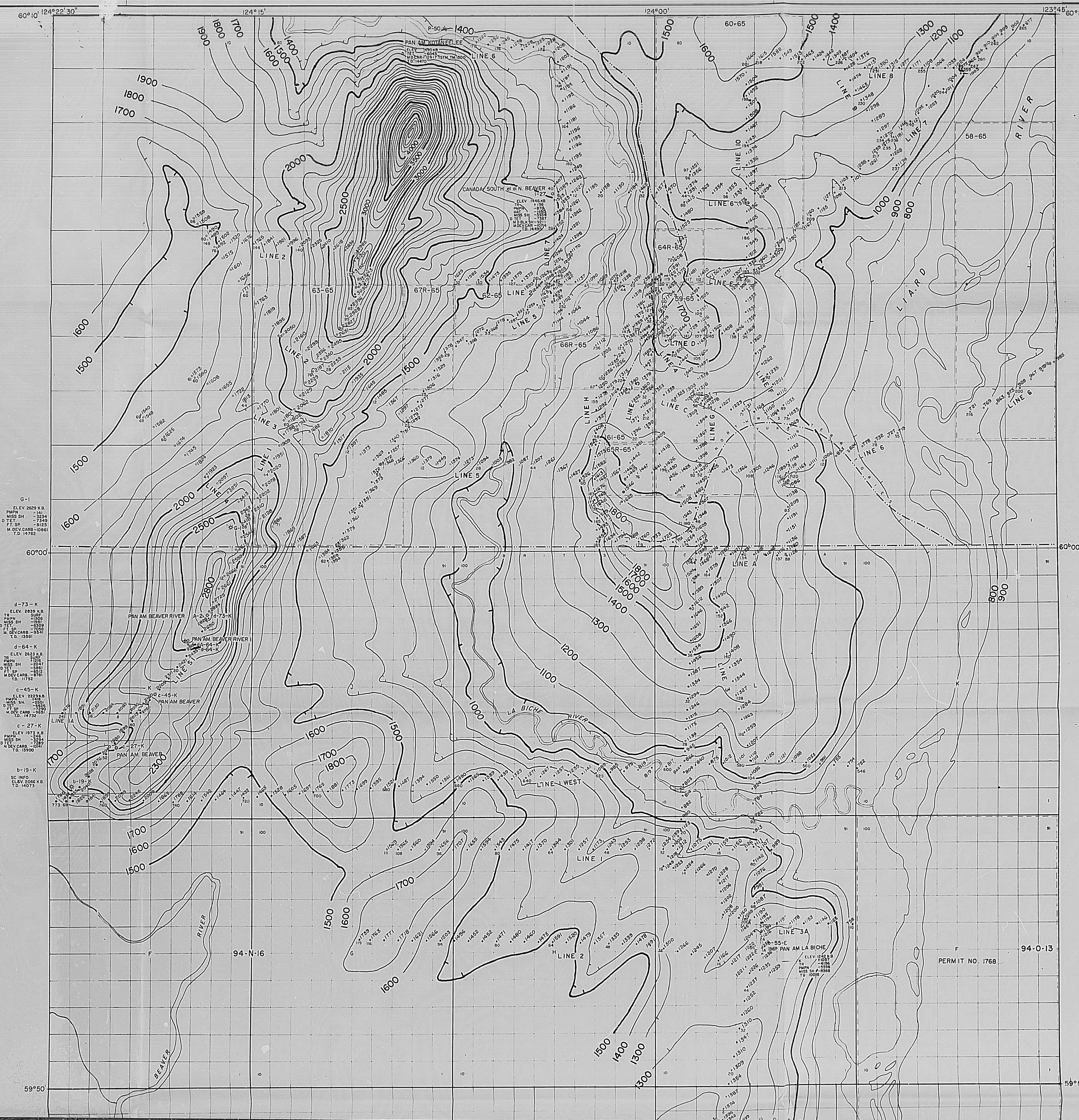
V. F. SCHUT, DIST. GEOPH.

R.H. WESTRA CO-ORD. GEOL.

GEOPHYSICAL SERVICE INC.



PAN AM A-2 BEAVER RIVER d-73-K



G-1
ELEV 2629 K.B.
PAN AM BEAVER RIVER
MUSKWA SH - 141
D TET - 7349
D TET - 7349
M DEV CARB - 10861
TD - 11782

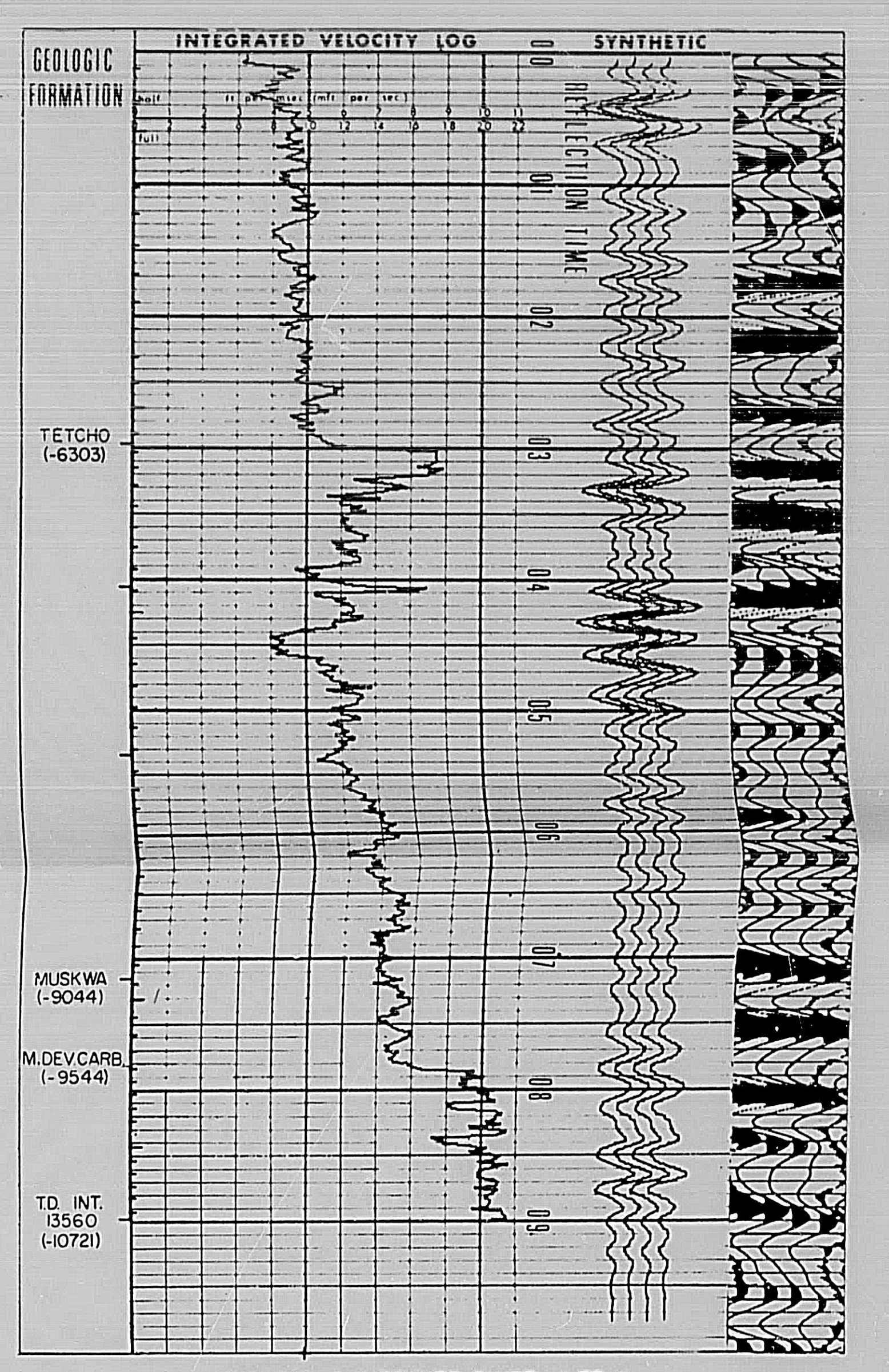
d-73-K
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MUSKWA SH - 141
D TET - 7349
D TET - 7349
M DEV CARB - 10861
TD - 11782

d-64-K
ELEV 2829 K.B.
PAN AM BEAVER RIVER
MUSKWA SH - 141
D TET - 7349
D TET - 7349
M DEV CARB - 10861
TD - 11782

c-45-K
ELEV 2829 K.B.
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D TET - 7349
D TET - 7349
M DEV CARB - 10861
TD - 11782

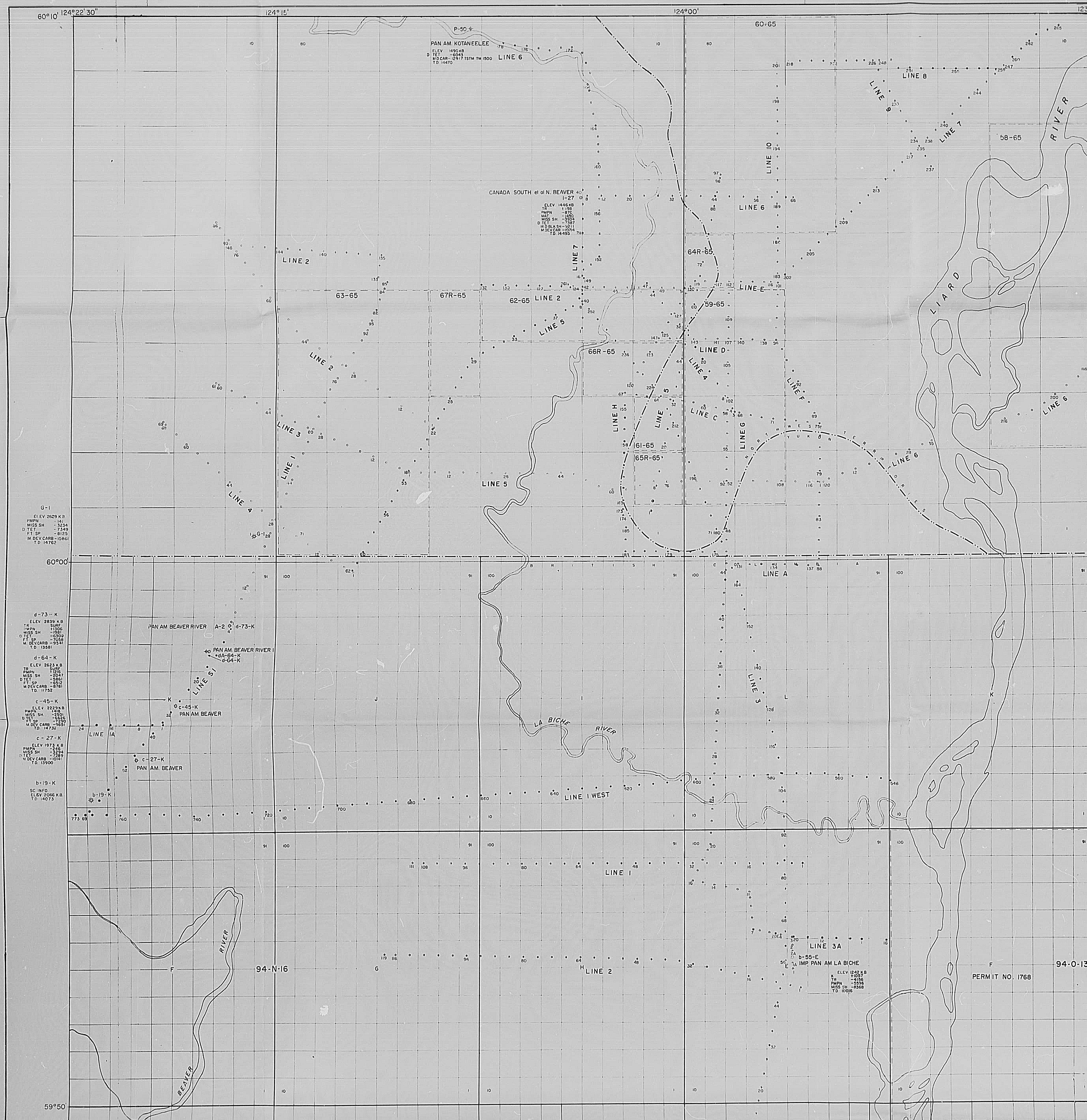
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MUSKWA SH - 141
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D TET - 7349
M DEV CARB - 10861
TD - 11782

b-19-K
SC INFO
ELEV 2000 K.B.
TD - 14073

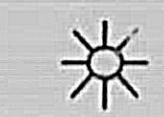


PAN AM A-2 BEAVER RIVER d-73-K

104



AMOCO BEAVER RIVER G-01



K B 2617

SERIES	FORMATION	EL 2617 K.B.	GEOLOGIC	SEISMIC
CRETACEOUS	GARRETT	550	500	
	TODD	1428	1000	
	GRANITE	1428	1500	
	TRIASSIC	2090	2000	
MISSISSIPPIAN	PERMIAN		2500	
			3000	
			3500	
			4000	
			4500	
			5000	
			5500	
			6000	
			6500	
			7000	
MISSISSIPPIAN	ETANDA	9980	9500	
	MISSISSIPPIAN LIMESTONE	10756	10000	
	BANFF	11620	11000	
	1st BLACK SHALE	12970	11500	
	2nd BLACK SHALE	13492	12000	

MISSISSIPPIAN LIMESTONE

MIDDLE DEVONIAN CARBONATE

11 of

PERMIT NO. 1768

94-0-13

94-N-16

H LINE 2

LINE 3A

b-55-E

IMP PAN AM LA BICHE

LINE 1 WEST

LINE 1

LINE 3

LINE 5

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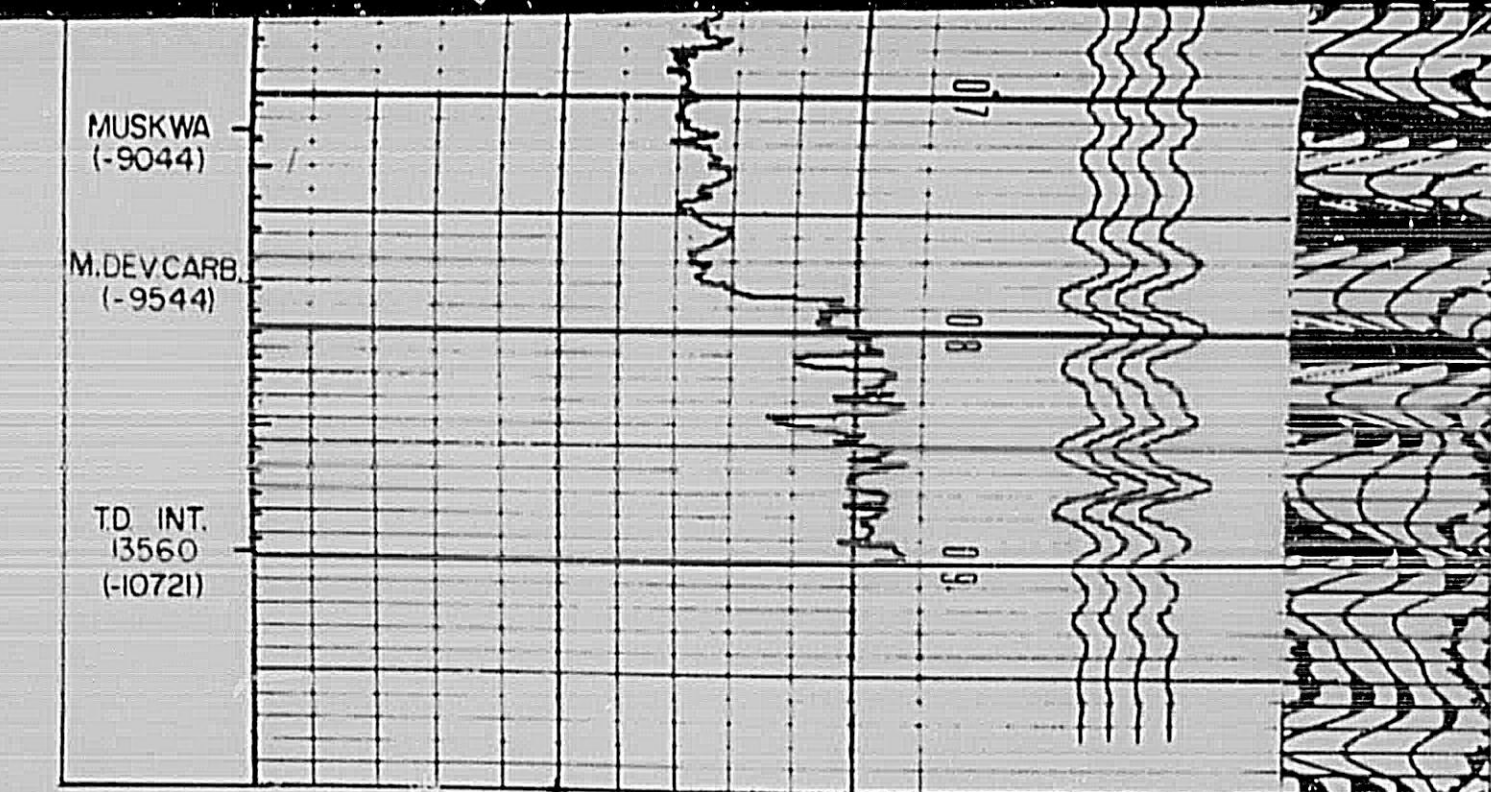
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LINE 214

LINE 215

LINE 216

LINE 217



PAN AM A-2 BEAVER RIVER d-73-K

G-1
ELEV 2629 K.B.
PMPN - 141
MISS SH - 3234
D TET. - 7349
FT. SP - 0125
M. DEV. CARB - 10861
TD 14762

d-73-K
ELEV. 2839 K.B.
TR SURF
PMPN +1306
MISS SH -1981
D TET. -6309
FT SP -7058
M DEVCARB -9541
TD 13581

d-64-K
ELEV 2623 K.B.
TR PMPN SURF
MISS SH +1216
DTET -2047
FT SP -5861
MDEV CARB. -6512
T.D. 11752

c-45-K
ELEV 2229KB
PMPH 1413
MISS SH. -2501
DTET -6526
FT SP -7290
M DEV CARB -9651
T.D. 14732

ELEV 1973 K.B
PMPN - 246
MISS SH - 3294
DET - 7289
M DEV CARB. - 10141
T.O. 13900

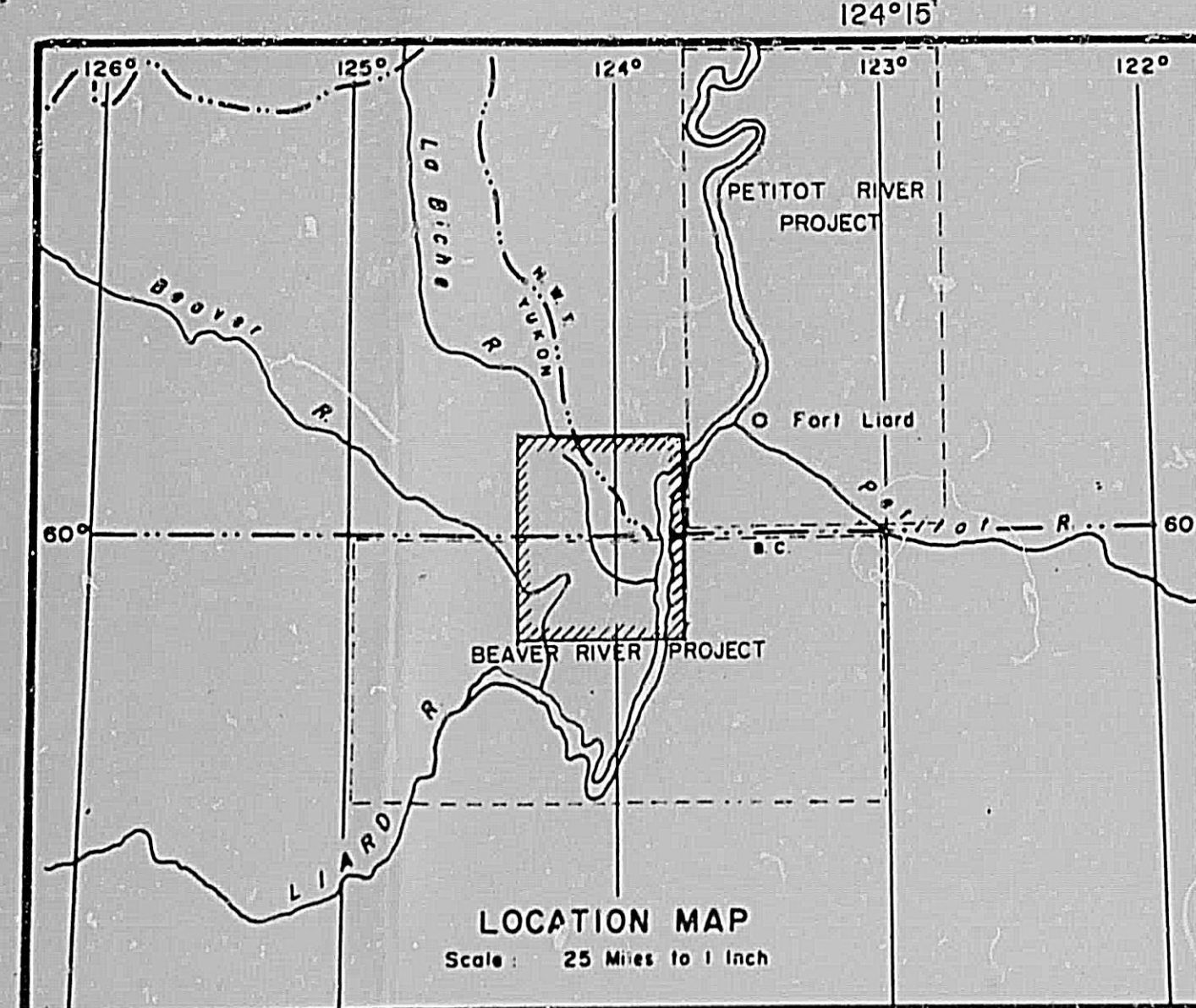
SC INFO.
EL&V 2066 KB.
TD 14073

F 94-N-16

F 94-0-13
PERMIT NO. 1768

TE 5367

2 of 2



FAULT DESIGNATION SYMBOLS

A, B, C, ETC _____ LOCATION

1 _____ DISCONTINUITY

2 _____ CORRELATION

3 _____ DIFFRACTED OR SPURIOUS ENERGY

4 _____ KNOWN

5 _____ ABNORMAL DIP

6 _____ TRAVERSE MISCLASURE

7 _____ GEOLOGIC CONCEPT

8 _____ NR RECORDS

N _____ NORMAL FAULT

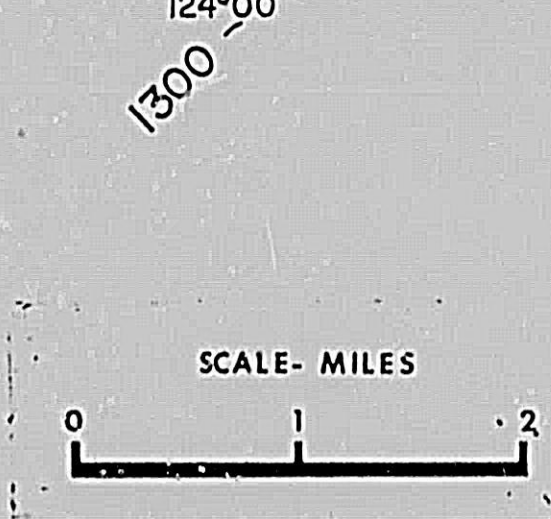
R _____ REVERSE FAULT

T-400 _____ THROW

 75° _____ DIP OF FAULT

SP 10
30° _____

_____ DIFFRACTED OR SPURIOUS ENERGY



LEGEND

- o LA BICHE (1969) PROJECT
- LA BICHE PROJECT
- LA BICHE PROJECT (SUPPLEMENT)
- BEAVER RIVER PROJECT
- o LA BICHE (1970)

LEGEND

P POOR
VP VERY POOR
NU NOT USEABLE AT MAPED HORIZONS
NR NO REFLECTIONS
NS NOT SHOT
(-2055) DEPTH PROJECTED
-2055 NEW OR REVISED DATA
① ② PROPOSED TRAVERSE A
SHOOTING SEQUENCE
—X— MIGRATING LINE A
POSITION OF DEPTH POINT
(MAX) APPROXIMATE OUTLINE MAXIMUM
RESIDUAL GRAVITY ANOMALY
(MIN) APPROXIMATE OUTLINE MINIMUM
RESIDUAL GRAVITY ANOMALY

DISTRIBUTION			
N.Y.	DEN.	FILE	(DISTRICT)

CLASSES				FIELD PARTY MONTHS
1	2	3	4	

TEXACO EXPLORATION COMPANY
CALGARY — ALBERTA — CANADA

PROJECT MAP

LA BICHE (1970) PROJECT

YUKON, N. W. T., B. C.

CANADA

ELEVATION

CONTOUR INTERVAL : 100 FT.
SCALE : 1 IN. = 1 ML.
DATUM : SEA LEVEL
DATE : JULY 9, 1970

D.J. STILES, INTERPRETATION
SEISMIC PARTY NO. 81
V.F. SCHUT, DIST. GEOPH.
R.H. WESTRA, CO-ORD. GEOL.

TELEDYNE EXPLORATION LTD.

G-1
ELEV 2629 K
MUSK SH - 3254
D.T. - 7249
F.T. - 8175
MUSK SH - 8175
TO 14762

d-73-K
ELEV 2839 K
MUSK SH - 3406
D.T. - 7249
F.T. - 8175
MUSK SH - 8175
TO 13581

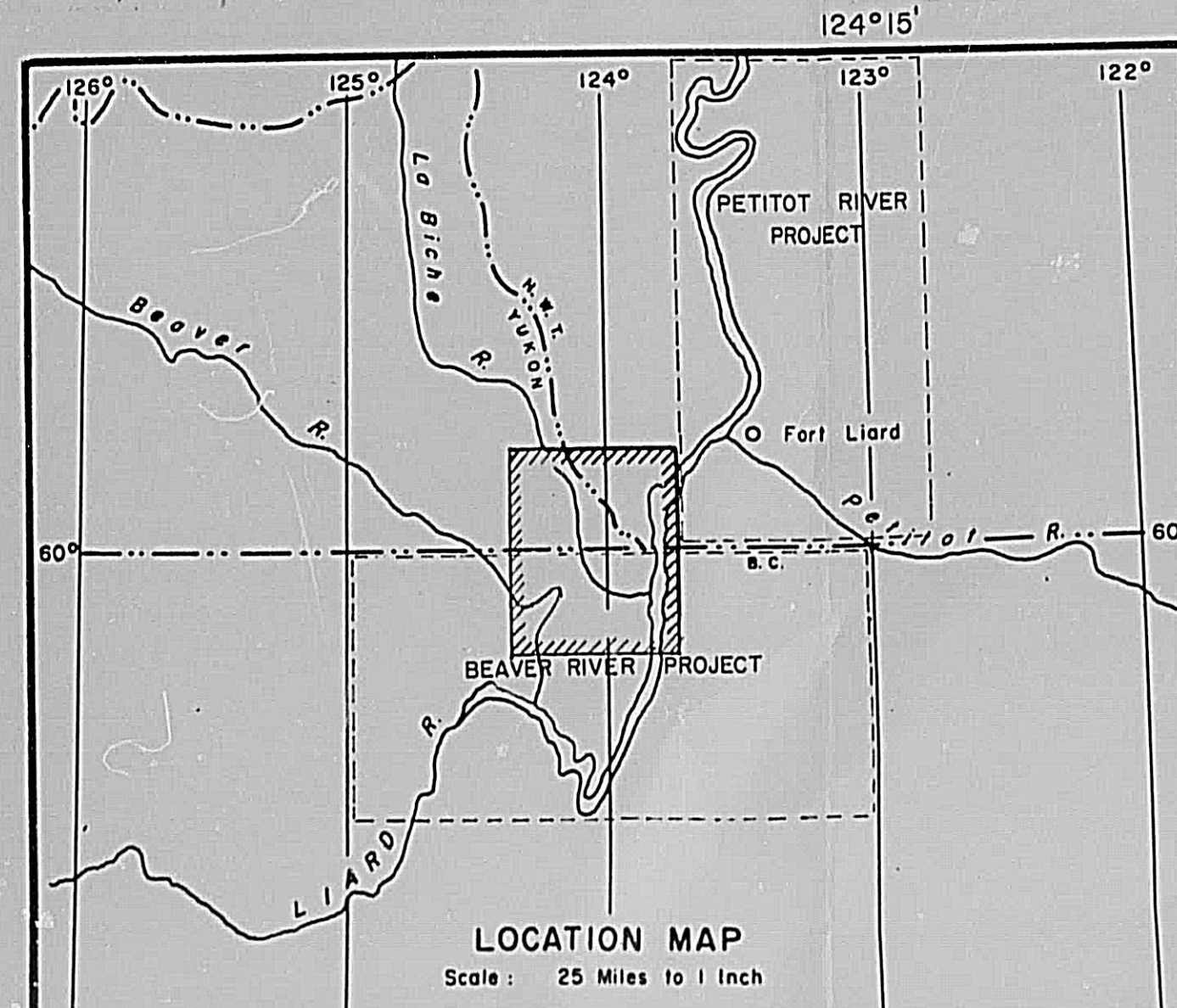
d-64-K
ELEV 2623 K
MUSK SH - 3254
D.T. - 7249
F.T. - 8175
MUSK SH - 8175
TO 11752

c-45-K
ELEV 2229 K
MUSK SH - 3254
D.T. - 7249
F.T. - 8175
MUSK SH - 8175
TO 14732

c-27-K
ELEV 1973 K
MUSK SH - 3254
D.T. - 7249
F.T. - 8175
MUSK SH - 8175
TO 13900

d-19-K
ELEV 2086 K
MUSK SH - 3254
D.T. - 7249
F.T. - 8175
MUSK SH - 8175
TO 14073

59°47'30"



FAULT DESIGNATION SYMBOLS

- A, B, C, ETC LOCATION
1 DISCONTINUITY
2 CORRELATION
3 DIFFRACTED OR SPURIOUS ENERGY
4 KNOWN
5 ABNORMAL DIP
6 TRAVERSE ENCLOSURE
7 GEOLOGIC CONCEPT
8 NR RECORDS
N NORMAL FAULT
R REVERSE FAULT
T-400 THROW
75° DIP OF FAULT
SP 10 DIFFRACTED OR SPURIOUS ENERGY
30°
3000

SCALE - MILES

LEGEND

- LA BICHE (1969) PROJECT
- LA BICHE PROJECT
- LA BICHE PROJECT (SUPPLEMENT)
- BEAVER RIVER PROJECT
- LA BICHE (1970)

LEGEND

- P POOR
VP VERY POOR
NU NOT USEABLE AT MAPPED HORIZONS
NR NO REFLECTIONS
NS NOT SHOT
(-2055) DEPTH PROJECTED
(-2055) NEW OR REVISED DATA
① ② PROPOSED TRAVERSE & SHOOTING SEQUENCE
X MIGRATING LINE & POSITION OF DEPTH POINT
(MAX) APPROXIMATE OUTLINE MAXIMUM RESIDUAL GRAVITY ANOMALY
(MIN) APPROXIMATE OUTLINE MINIMUM RESIDUAL GRAVITY ANOMALY

DISTRIBUTION

N.Y.	DEN.	FILE	(DISTRICT)

CLASSES

1	2	3	4

FIELD PARTY MONTHS

TEXACO EXPLORATION CANADA LTD.
CALGARY ALBERTA CANADA

PROJECT MAP

LA BICHE (1970) PROJECT
YUKON, N.W.T., B.C. CANADA

CONTOUR INTERVAL:
SCALE: 1 IN. = 1 ML.
DATUM:
DATE:

M. MORRIS, INTERPRETATION
SEISMIC PARTY NO. 81
R.J. BADEN, DIST. GEOPH.
B.A. SKINNER, CO-ORD. GEOL.

TELEDYNE EXPLORATION LTD.

MISSISSIPPIAN

MATSON

ETANDA

MISSISSIPPIAN Limestone

BANFF

1st BLACK SHALE

2nd BLACK SHALE

MIDDLE DEVONIAN CARBONATE

2500

3000

3500

4000

4500

5000

5500

6000

9500

9980

10000

10500

10756

11000

11500

11620

12000

12500

12970

13000

13492

13500

14000

14600

T.D.

MISSISSIPPIAN LIMESTONE

MIDDLE DEVONIAN CARBONATE

2 of 2

G-1
ELEV 2629 K.B.
MUSKWA (-9044)
M.D.E.V. CARR. (-9544)
TO 14762

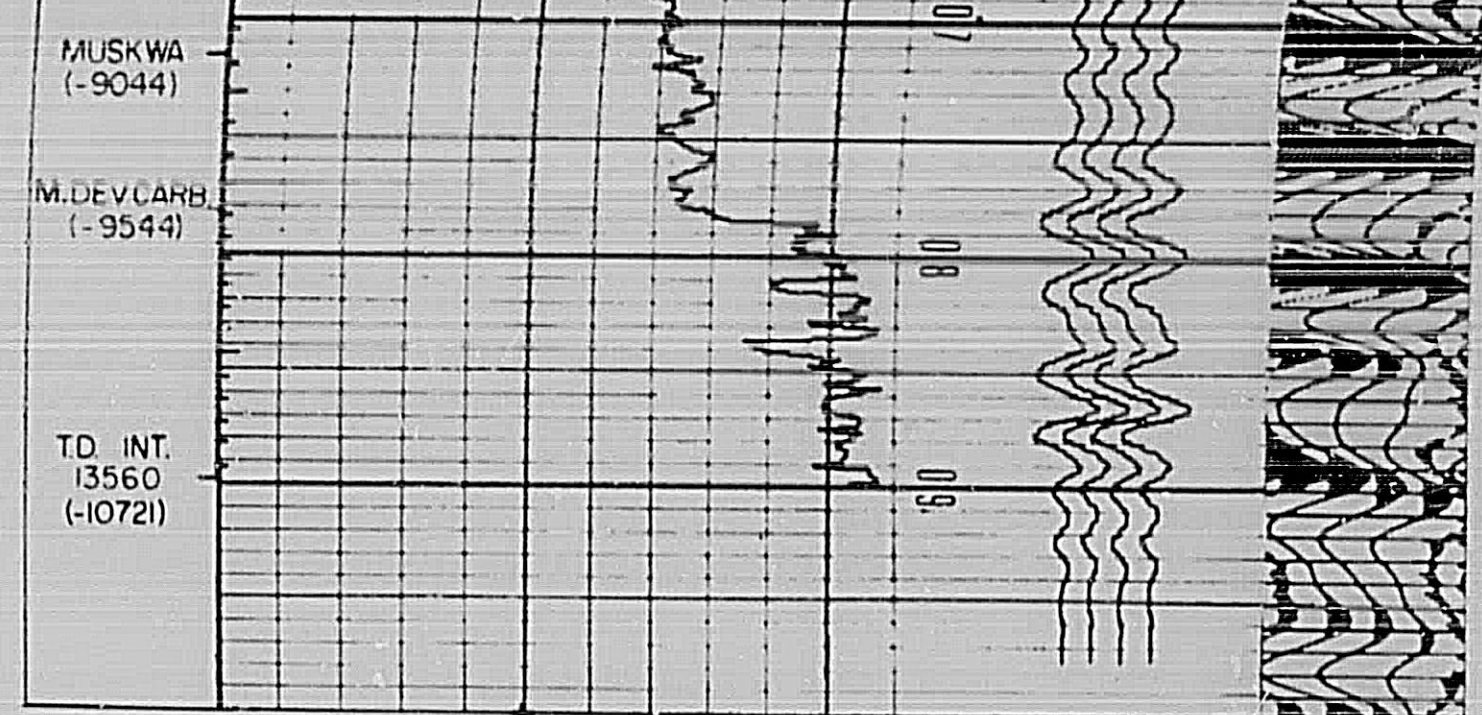
G-73-K
ELEV 2629 K.B.
MUSKWA (-9044)
M.D.E.V. CARR. (-9544)
TO 14762

G-64-K
ELEV 2629 K.B.
MUSKWA (-9044)
M.D.E.V. CARR. (-9544)
TO 14762

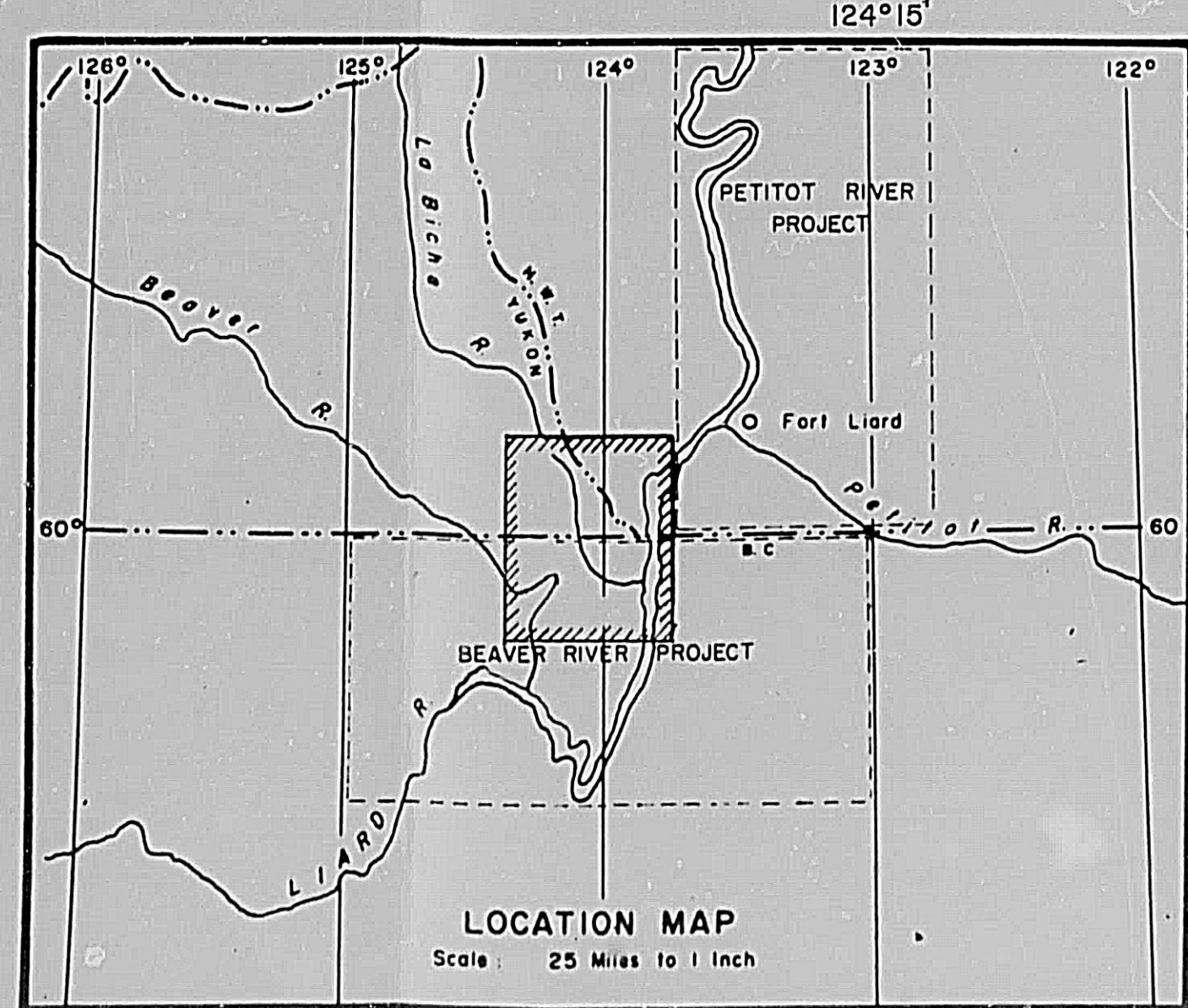
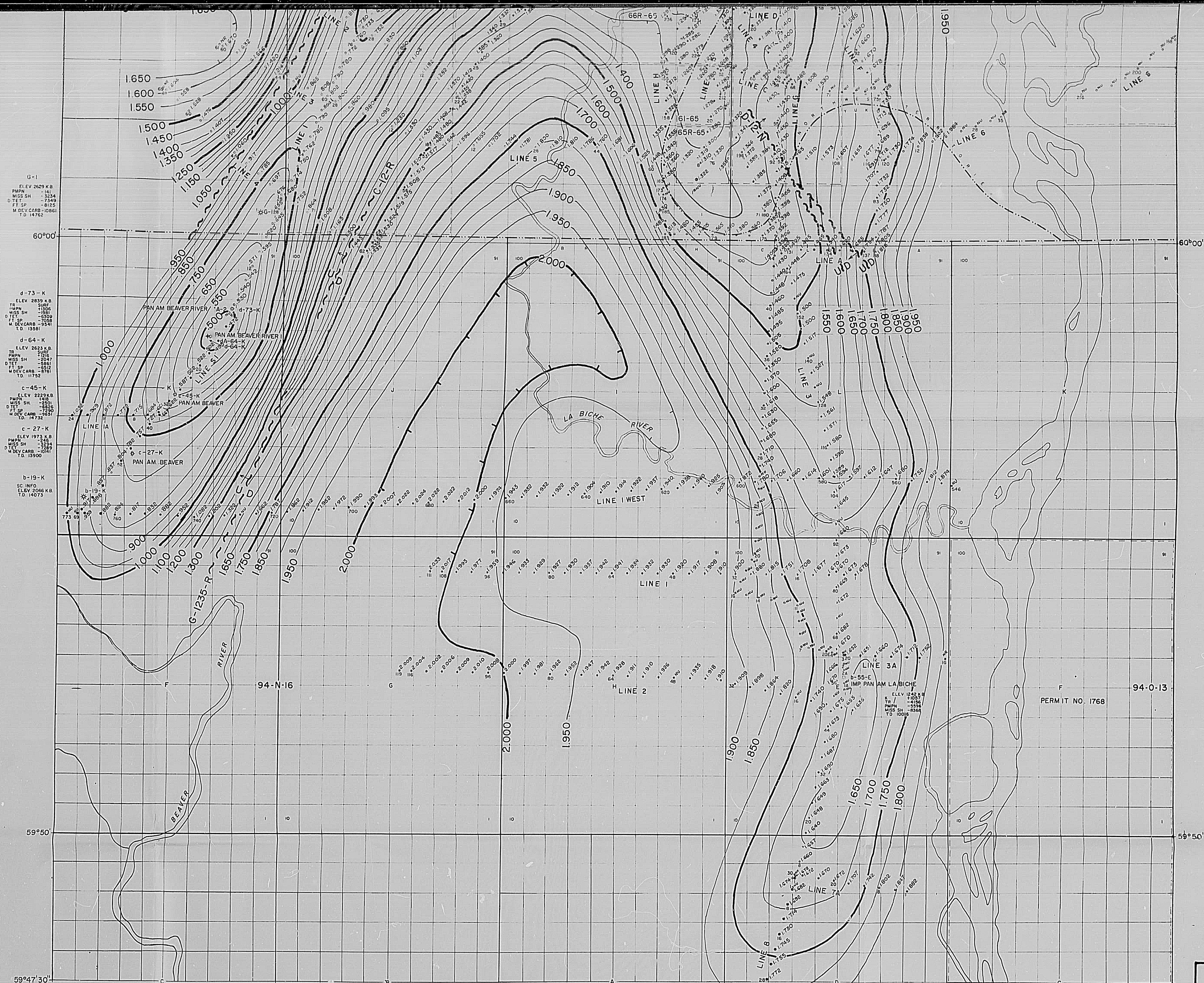
C-45-K
ELEV 2629 K.B.
MUSKWA (-9044)
M.D.E.V. CARR. (-9544)
TO 14762

C-27-K
ELEV 2629 K.B.
MUSKWA (-9044)
M.D.E.V. CARR. (-9544)
TO 14762

b-19-K
ELEV 2629 K.B.
MUSKWA (-9044)
M.D.E.V. CARR. (-9544)
TO 14762

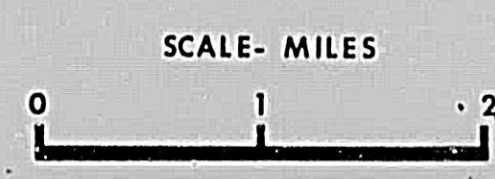


PAN AM A-2 BEAVER RIVER d-73-K



FAULT DESIGNATION SYMBOLS

A, B, C, ETC	LOCATION
1	DISCONTINUITY
2	CORRELATION
3	DIFFRACTED OR SPURIOUS ENERGY
4	KNOWN
5	ABNORMAL DIP
6	TRAVERSE MISCLASURE
7	GEOLOGIC CONCEPT
8	NR RECORDS
N	NORMAL FAULT
R	REVERSE FAULT
T-400	THROW
75°	DIP OF FAULT
SP. 10	DIFFRACTED OR SPURIOUS ENERGY



- LEGEND**
- LA BICHE (1969) PROJECT
 - LA BICHE PROJECT
 - LA BICHE PROJECT (SUPPLEMENT)
 - BEAVER RIVER PROJECT
 - LA BICHE (1970)

LEGEND

P	POOR
VP	VERY POOR
NU	NOT USEABLE AT MAPPED HORIZONS
NR	NO REFLECTIONS
NS	NOT SHOT
(-2055)	DEPTH PROJECTED
-2055	NEW OR REVISED DATA
① ②	PROPOSED TRAVERSE & SHOOTING SEQUENCE
X	MIGRATING LINE & POSITION OF DEPTH POINT
(MAX)	APPROXIMATE OUTLINE MAXIMUM RESIDUAL GRAVITY ANOMALY
(MIN)	APPROXIMATE OUTLINE MINIMUM RESIDUAL GRAVITY ANOMALY

DISTRIBUTION

N.Y.	DEN.	FILE	(DISTRICT)

CLASSES

1	2	3	4

FIELD PARTY MONTHS

TE 5366

2 of 2

TEXACO EXPLORATION COMPANY
CALGARY ALBERTA CANADA

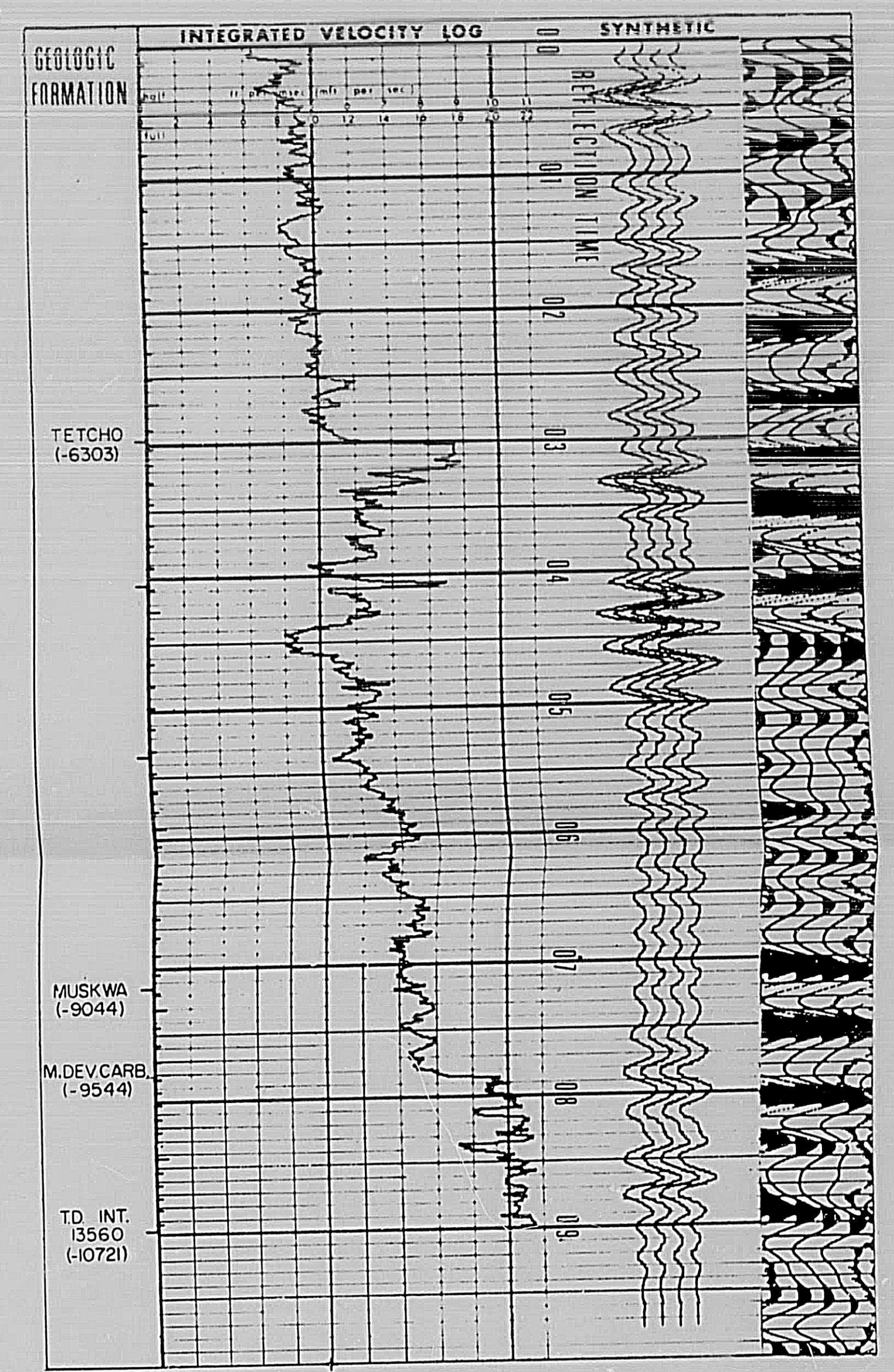
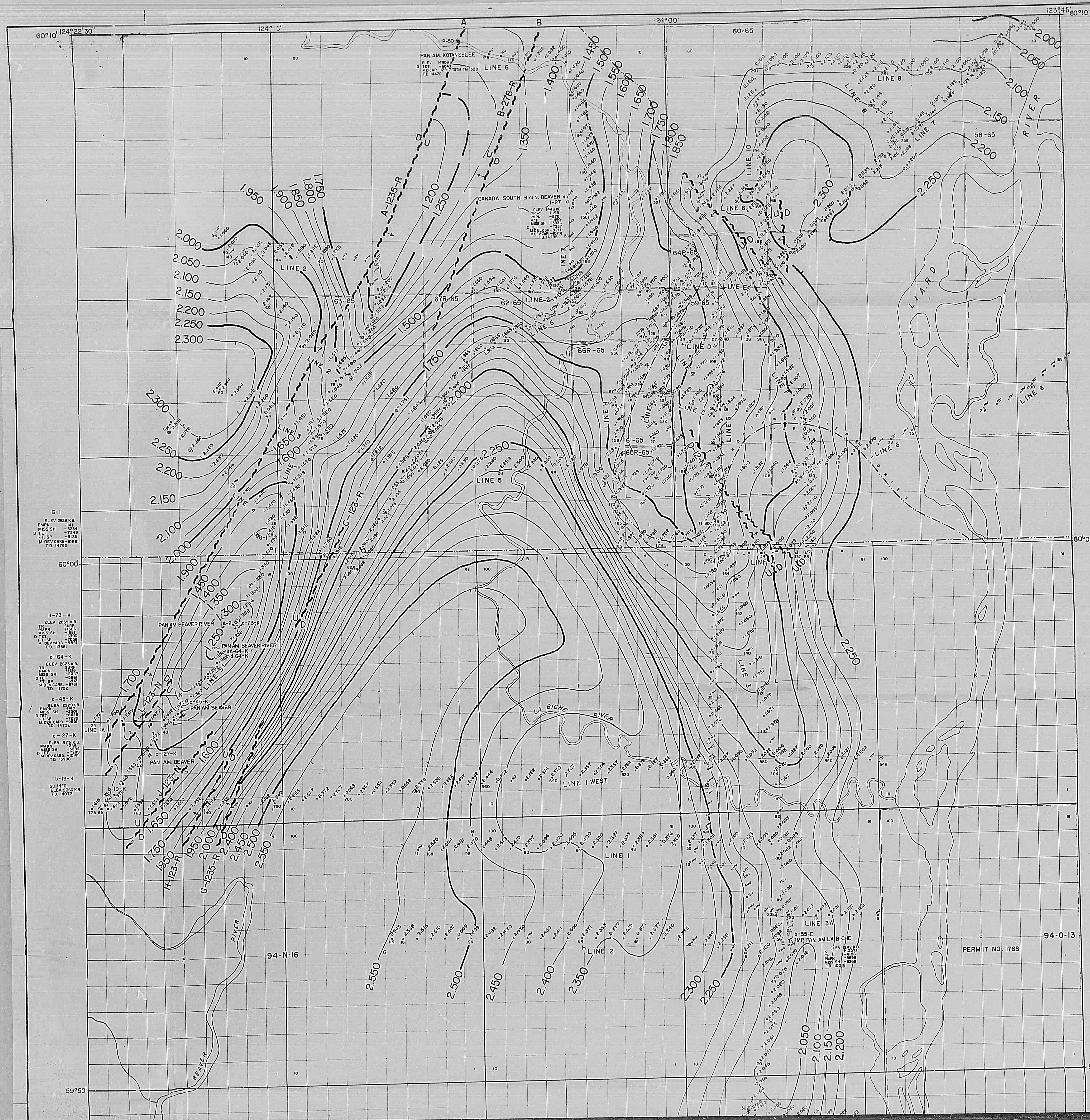
PROJECT MAP
LA BICHE (1970) PROJECT
YUKON, N.W.T., B.C. CANADA

MISSISSIPPIAN

CONTOUR INTERVAL: .050 SEC.
SCALE: 1 IN. = 1 ML.
DATUM: +1500 FT.
DATE: JULY 9, 1970

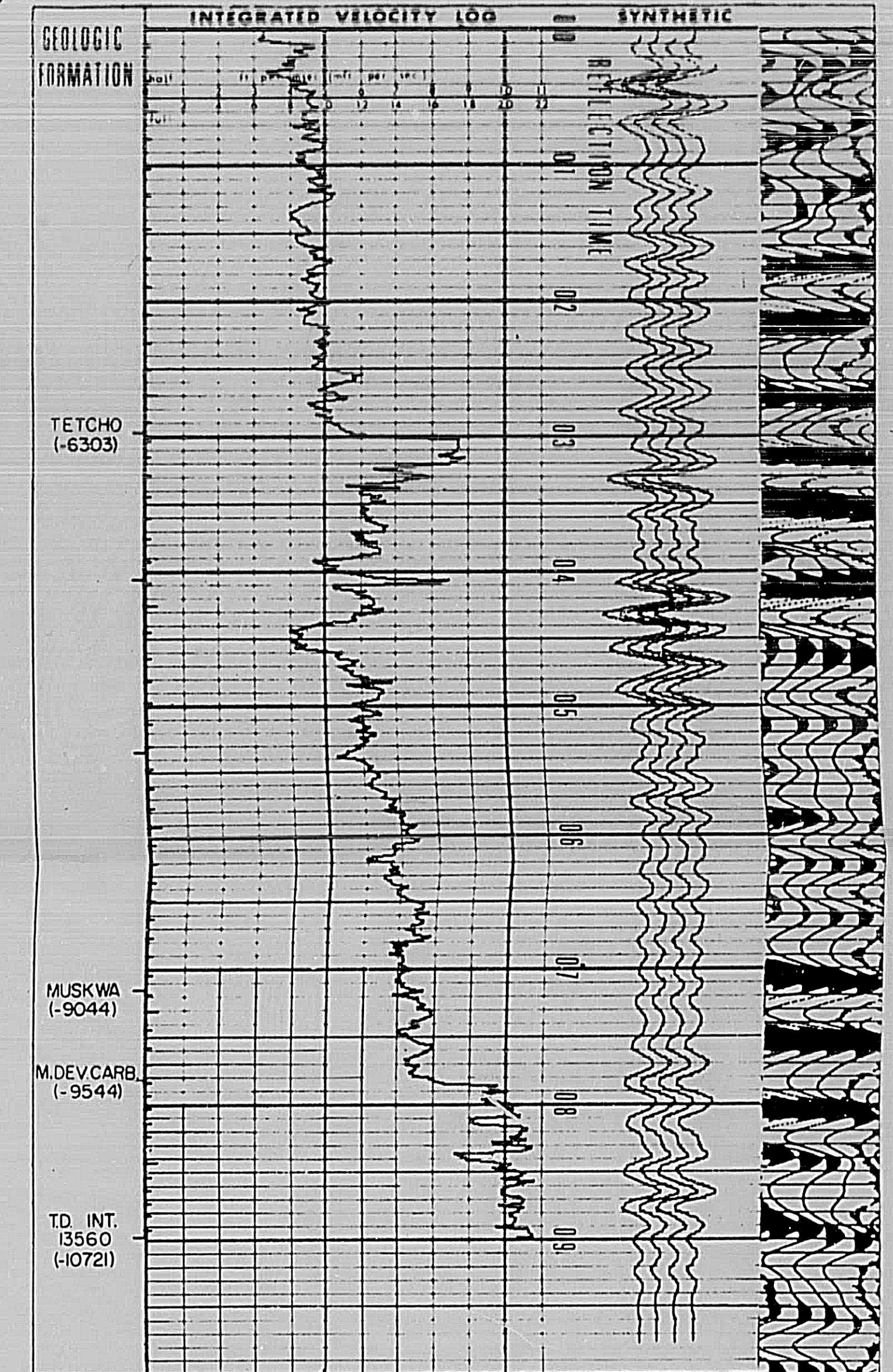
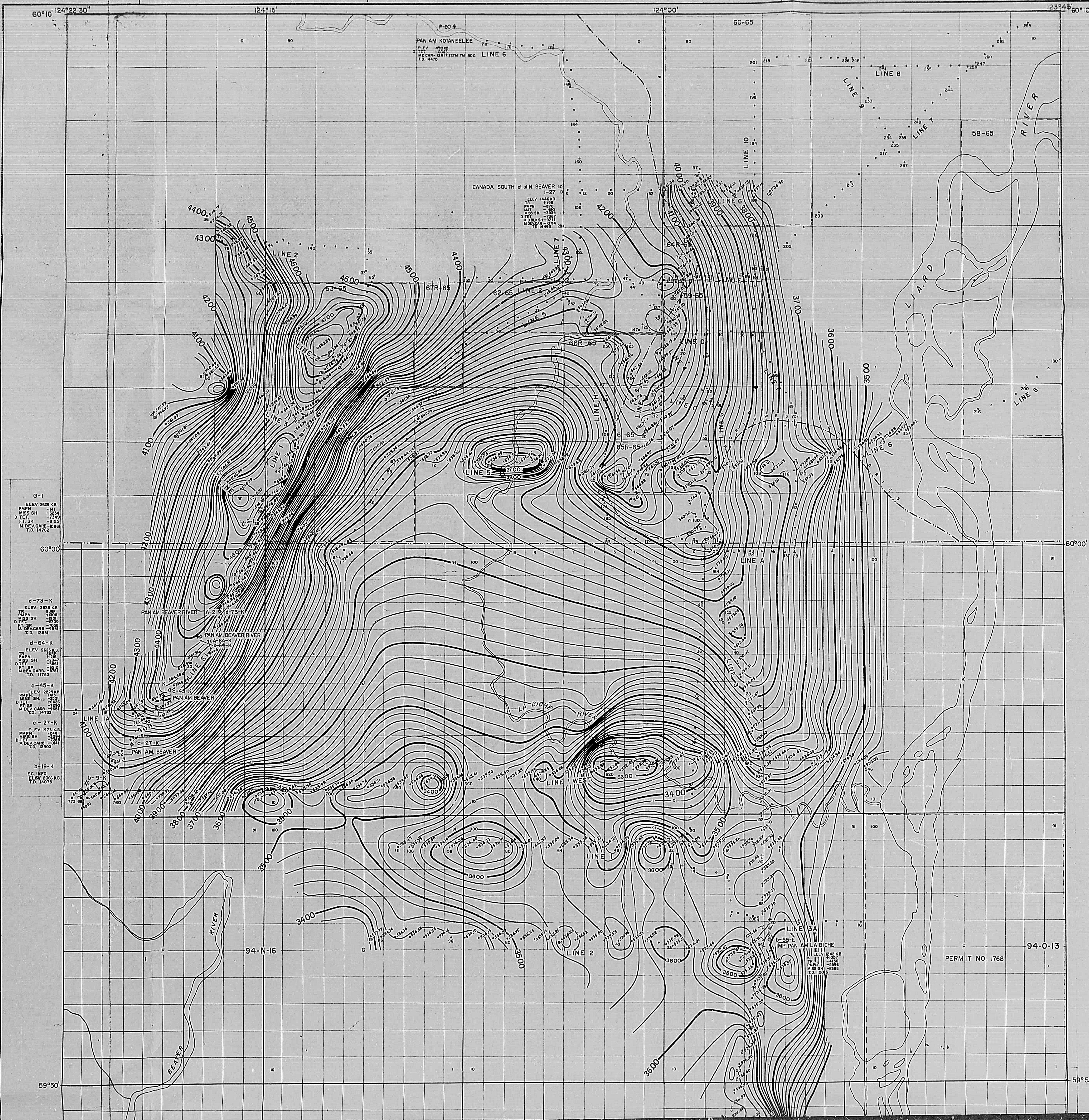
D.J. STILES, INTERPRETATION
SEISMIC PARTY NO. 81
V.F. SCHUT, DIST. GEOPH.
R.H. WESTRA, CO-ORD. GEOL.

TELEDYNE EXPLORATION LTD.



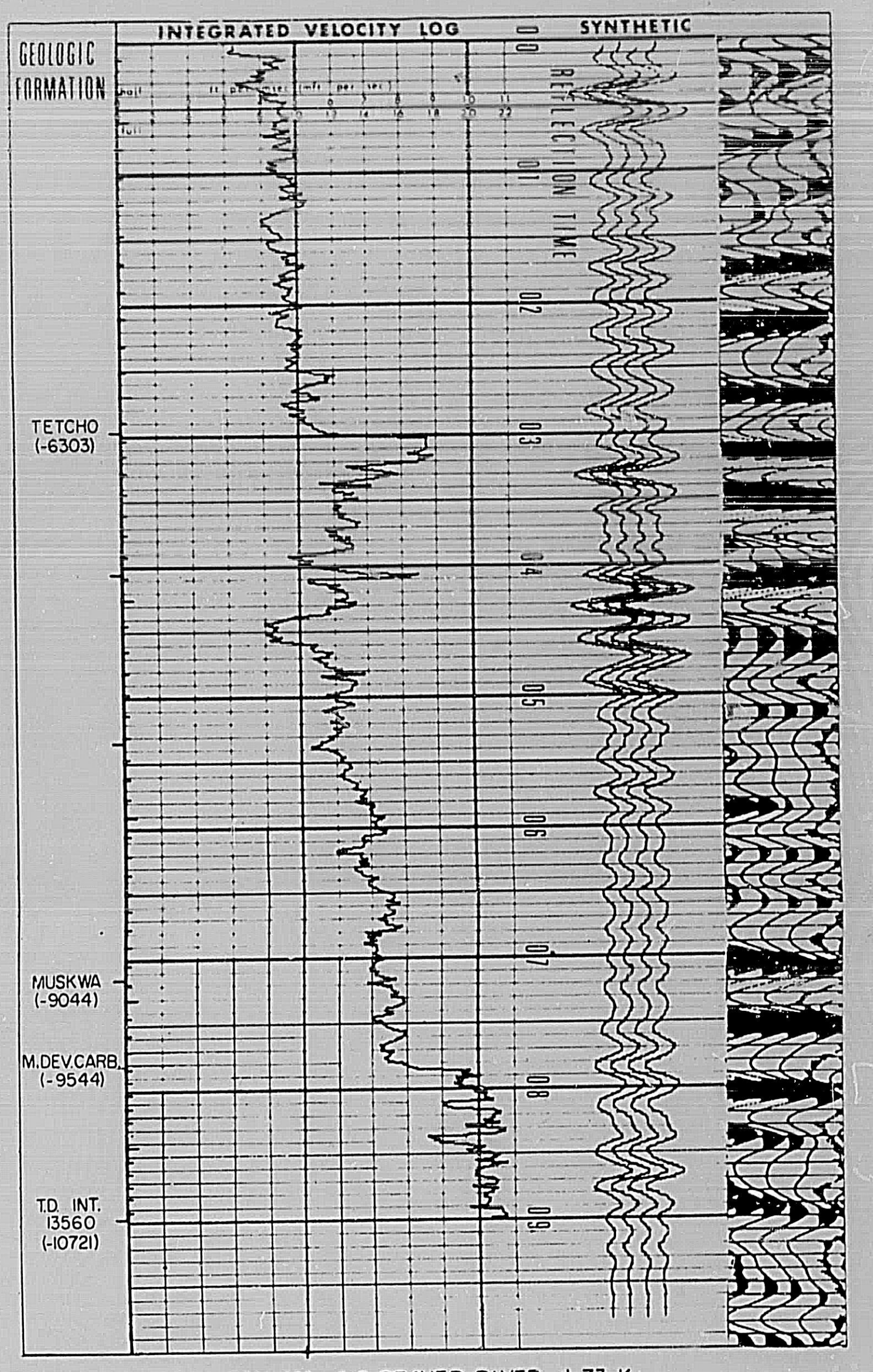
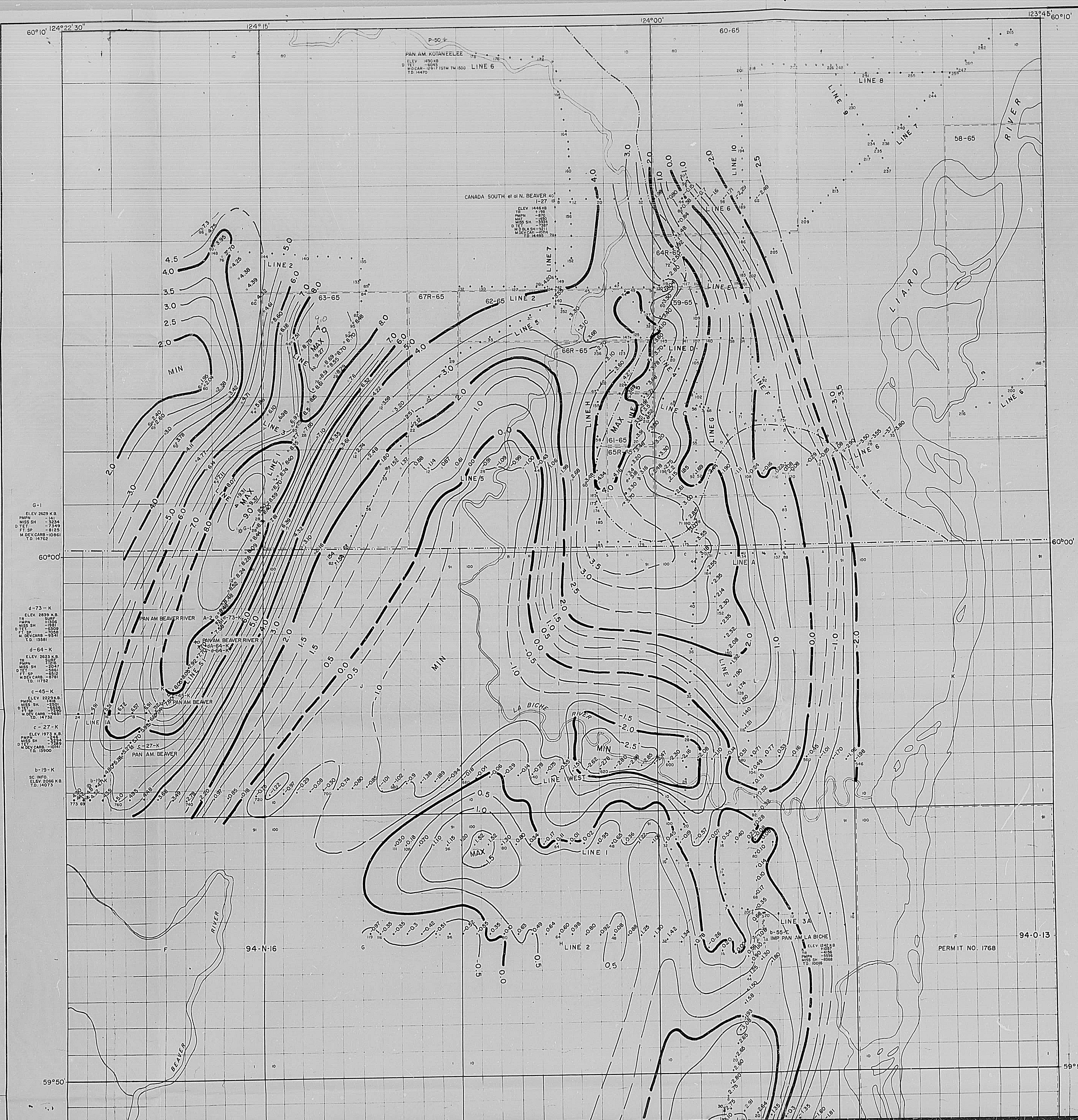
PAN AM A-2 BEAVER RIVER d-73-K

1 of



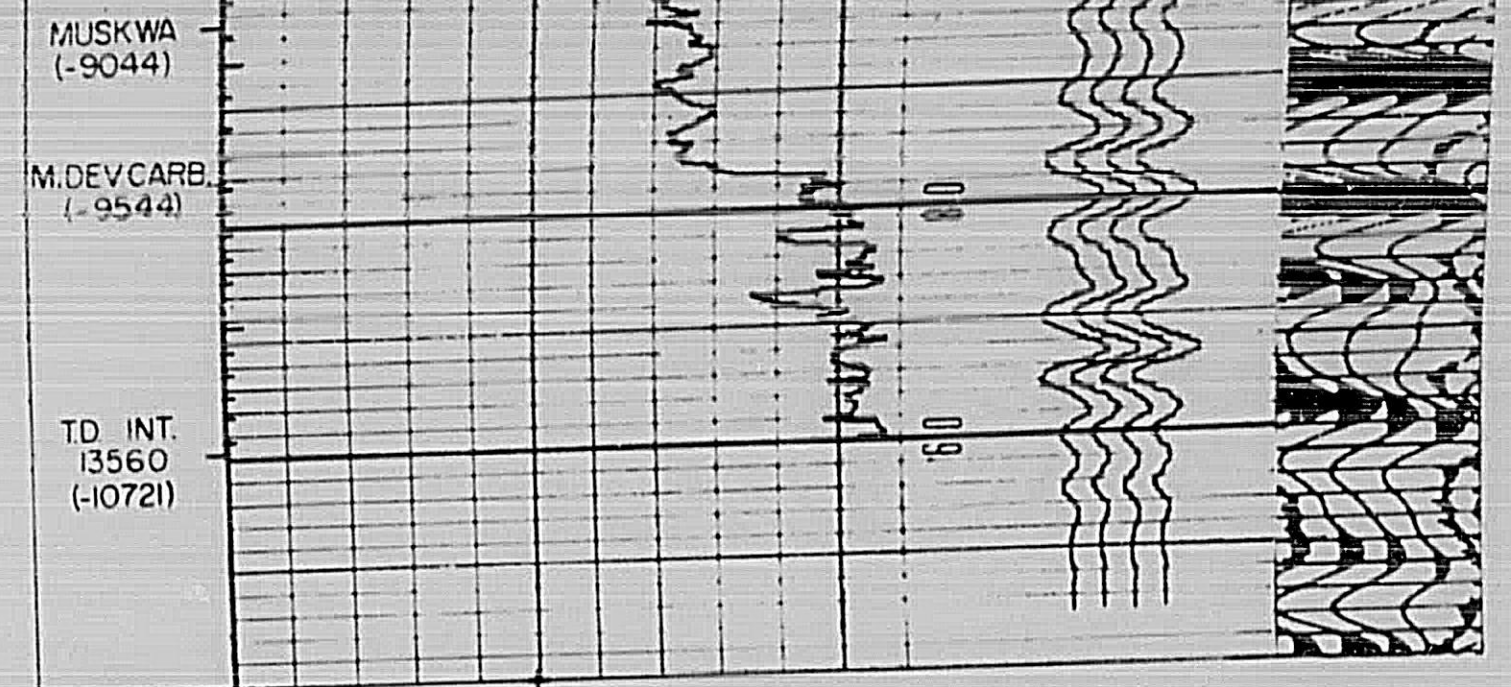
PAN AM A-2 BEAVER RIVER d-73-K

1104



PAN AM A-2 BEAVER RIVER d-73-K

1 of



PAN AM A-2 BEAVER RIVER d-73-K

G-1
ELEV 2829 K.B.
M.P.N. - 151
M.S.S. SH - 1524
D.T.E. SH - 1529
D.T.E. SH - 1535
M. DEV. CARB. - 10861
T.D. 14762

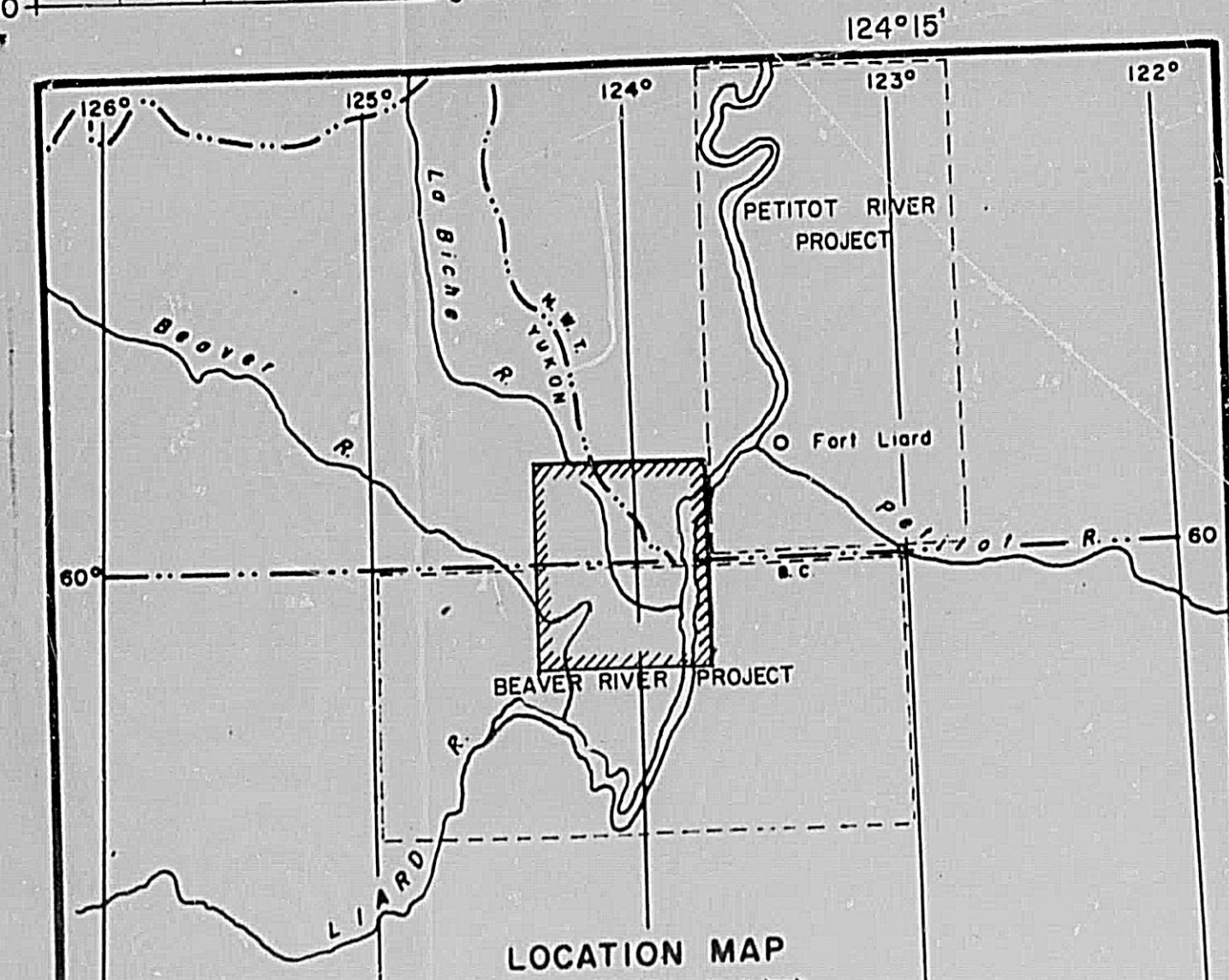
d-73-K
ELEV 2829 K.B.
M.P.N. - 151
M.S.S. SH - 1524
D.T.E. SH - 1529
D.T.E. SH - 1535
M. DEV. CARB. - 10861
T.D. 14762

d-64-K
ELEV 2829 K.B.
M.P.N. - 151
M.S.S. SH - 1524
D.T.E. SH - 1529
D.T.E. SH - 1535
M. DEV. CARB. - 10861
T.D. 14762

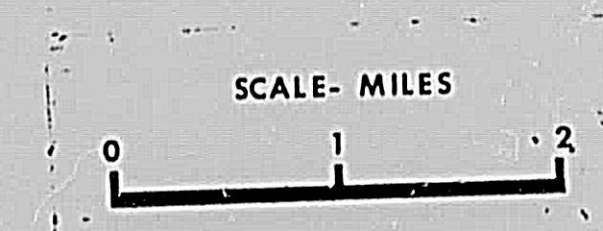
c-45-K
ELEV 2829 K.B.
M.P.N. - 151
M.S.S. SH - 1524
D.T.E. SH - 1529
D.T.E. SH - 1535
M. DEV. CARB. - 10861
T.D. 14762

c-27-K
ELEV 1973 K.B.
M.P.N. - 151
M.S.S. SH - 1524
D.T.E. SH - 1529
D.T.E. SH - 1535
M. DEV. CARB. - 10861
T.D. 14762

b-19-K
SC. INFO.
ELEV 2066 K.B.
T.D. 14073



FAULT DESIGNATION SYMBOLS	
A, B, C, ETC	LOCATION
1	DISCONTINUITY
2	CORRELATION
3	DIFFRACTED OR SPURIOUS ENERGY
4	KNOWN
5	ABNORMAL DIP
6	TRAVERSE MISCLASURE
7	GEOLOGIC CONCEPT
8	NR RECORDS
N	NORMAL FAULT
R	REVERSE FAULT
T-400	THROW
73°	DIP OF FAULT
SP 10	DIFFRACTED OR SPURIOUS ENERGY



- LEGEND
- LA BICHE (1969) PROJECT
 - LA BICHE PROJECT
 - LA BICHE PROJECT (SUPPLEMENT)
 - BEAVER RIVER PROJECT
 - LA BICHE (1970)

LEGEND	
P	POOR
VP	VERY POOR
NU	NOT USEABLE AT MAPPED HORIZONS
NR	NO REFLECTIONS
NS	NOT SHOT
(-2055)	DEPTH PROJECTED
-2055	NEW OR REVISED DATA
(1) (2)	PROPOSED TRAVERSE & SHOOTING SEQUENCE
-X	MIGRATING LINE & POSITION OF DEPTH POINT
(MAX)	APPROXIMATE OUTLINE MAXIMUM RESIDUAL GRAVITY ANOMALY
(MIN)	APPROXIMATE OUTLINE MINIMUM RESIDUAL GRAVITY ANOMALY

DISTRIBUTION	
N.Y.	DEN. FILE (DISTRICT)

CLASSES	
1	2
3	4

FIELD PARTY MONTHS	
1	2
3	4

TE 5572

2 of 2

TEXACO
CALGARY

EXPLORATION
ALBERTA

COMPANY
CANADA

PROJECT MAP
LA BICHE (1970) PROJECT
YUKON, N.W.T., B.C. CANADA

LOWER MISSISSIPPIAN

CONTOUR INTERVAL: .050 SEC.
SCALE: 1 IN. = 1 ML.
DATUM: +1500 FT.
DATE: JULY 9, 1970

D.J. STILES, INTERPRETATION
SEISMIC PARTY NO. 81
V.F. SCHUT, DIST. GEOPH.
R.H. WESTRA, CO-ORD. GEOL.

TELEDYNE EXPLORATION LTD.

G-1
ELEV 2629 K.B.
P.M.P. 141
M.D. SH -3254
D.T. SH -7249
F.T. SH -8125
M.D. CARB -1086
T.D. 14762

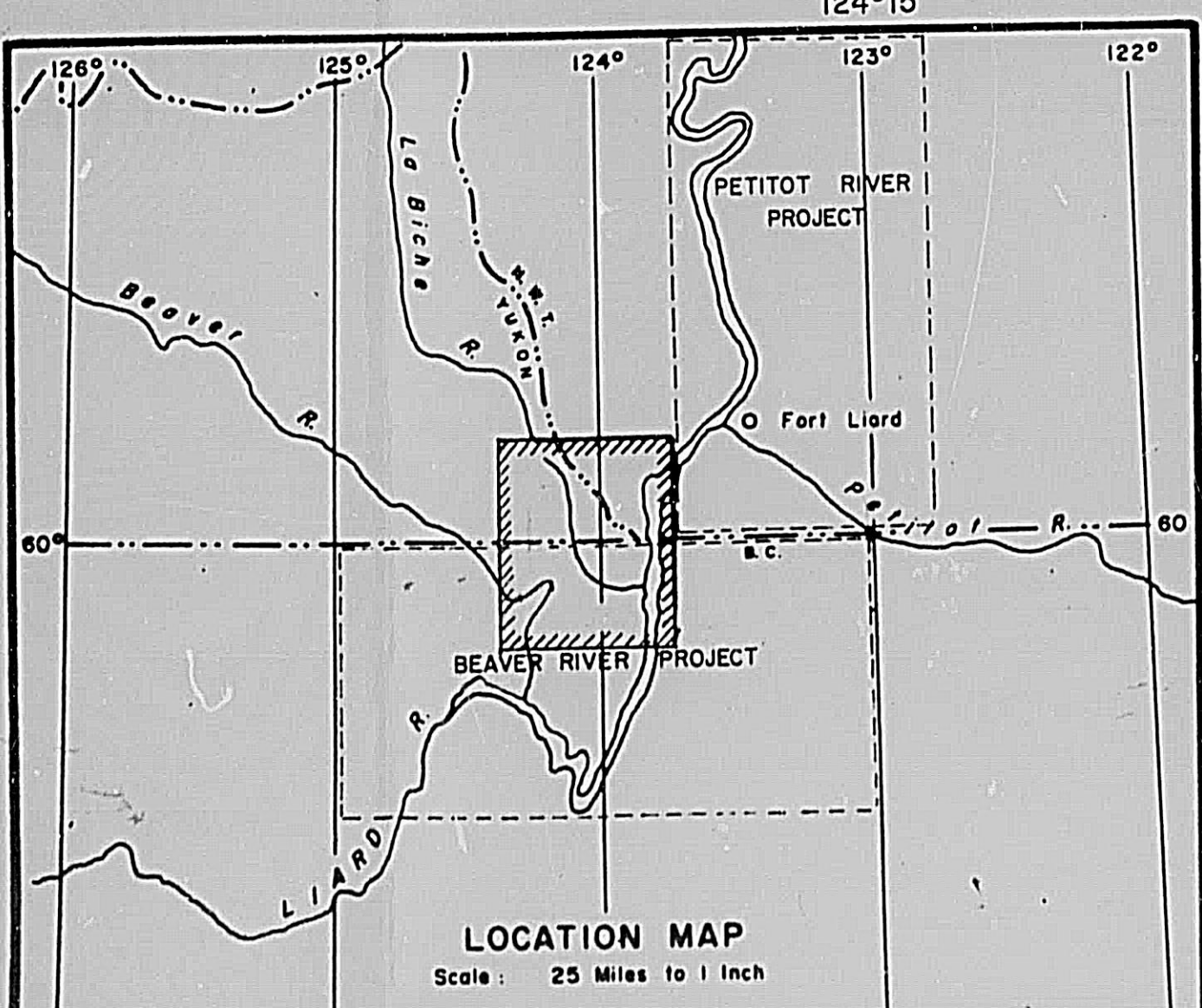
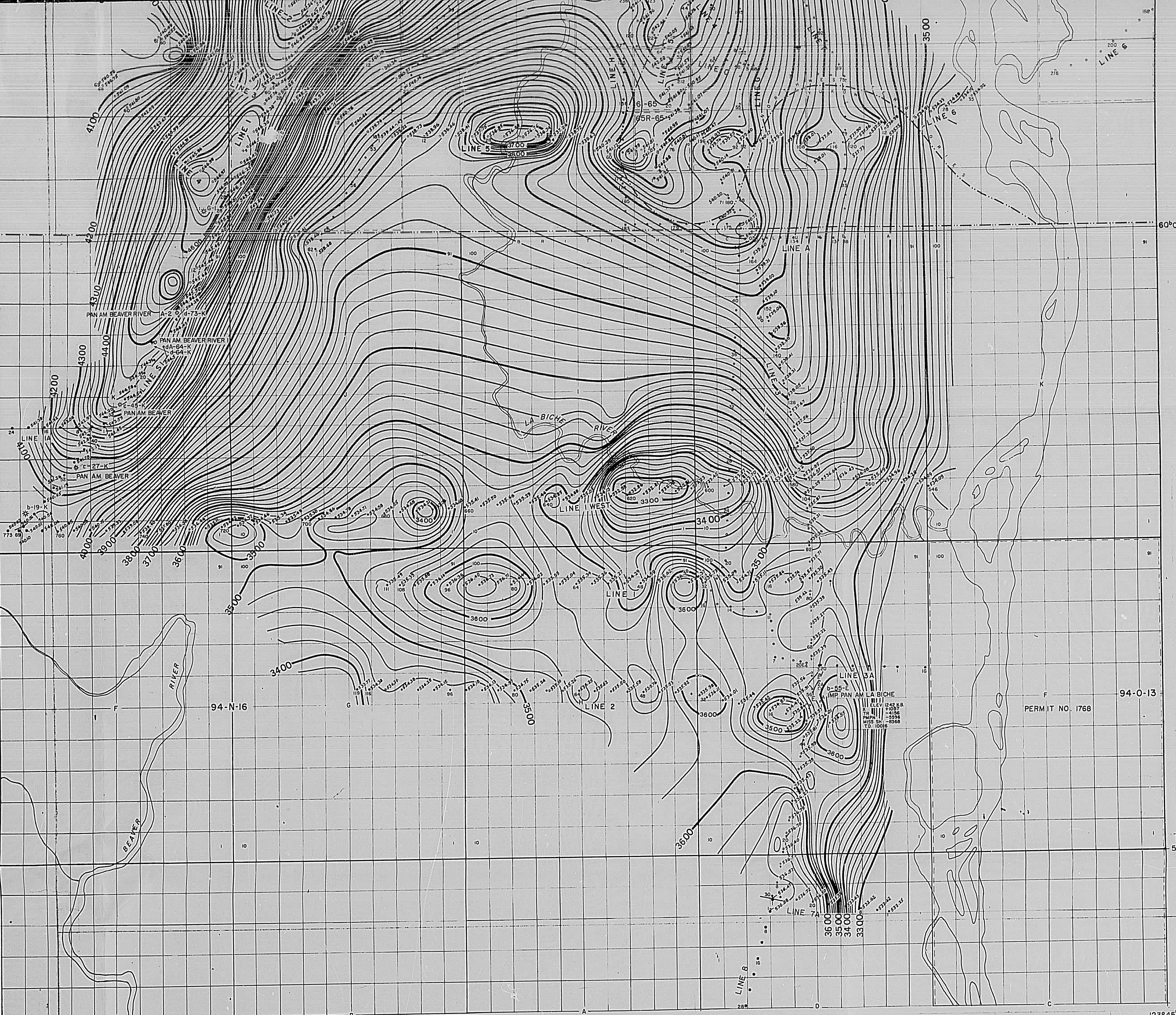
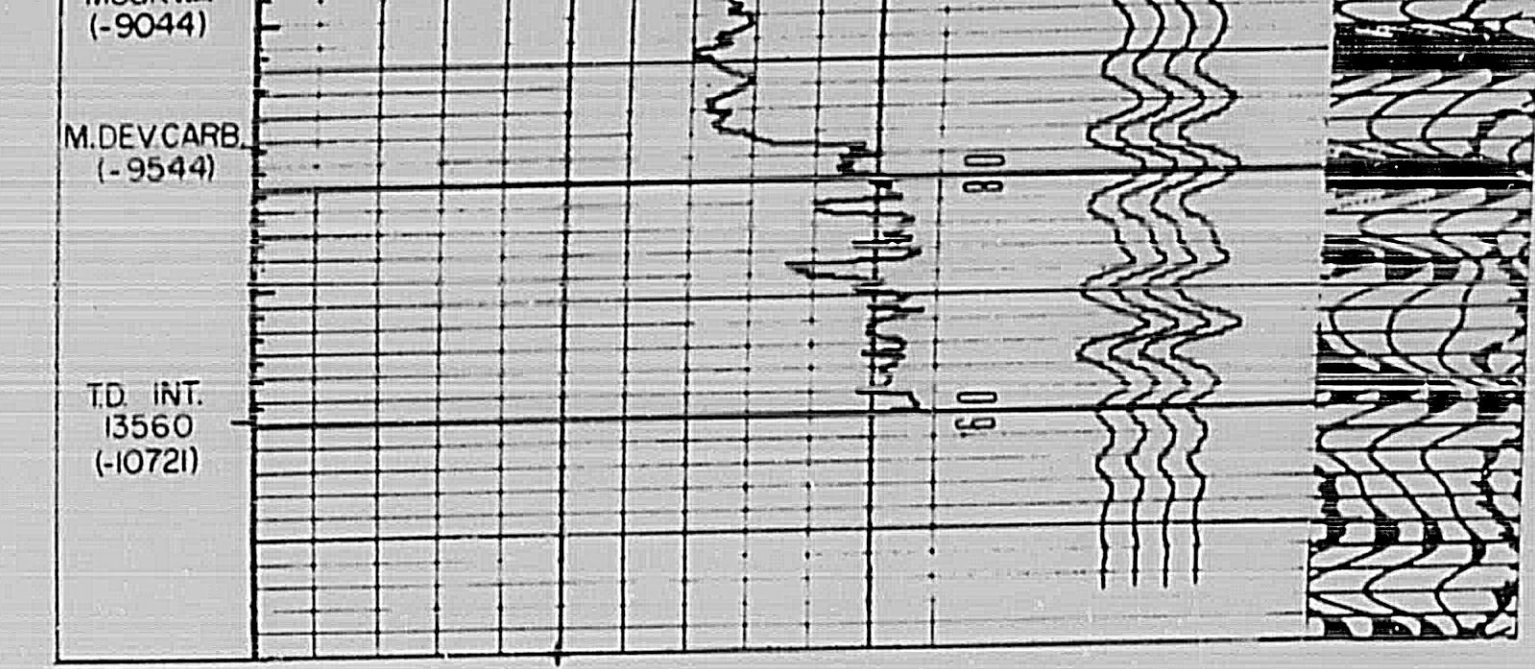
d-73-K
ELEV 2839 K.B.
P.M.P. 141
M.D. SH -3254
D.T. SH -7249
F.T. SH -8125
M.D. CARB -1086
T.D. 13981

d-64-K
ELEV 2625 K.B.
P.M.P. 141
M.D. SH -3254
D.T. SH -7249
F.T. SH -8125
M.D. CARB -1086
T.D. 11752

c-45-K
ELEV 2229 K.B.
P.M.P. 141
M.D. SH -3254
D.T. SH -7249
F.T. SH -8125
M.D. CARB -1086
T.D. 14752

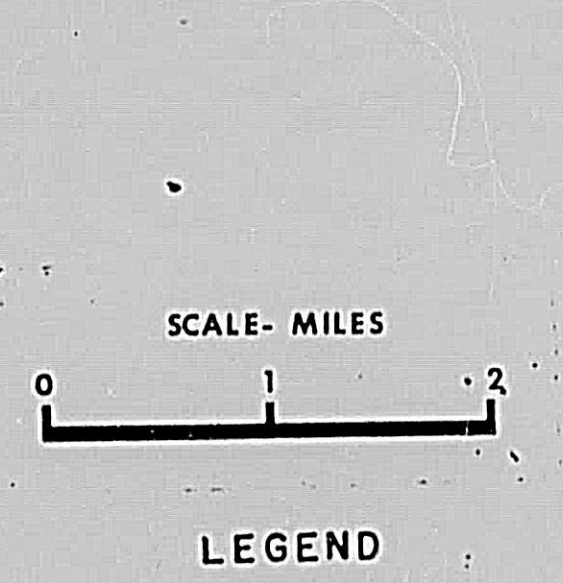
c-27-K
ELEV 1973 K.B.
P.M.P. 141
M.D. SH -3254
D.T. SH -7249
F.T. SH -8125
M.D. CARB -1086
T.D. 13900

b-19-K
SC INFO
ELEV 2066 K.B.
T.D. 14073



FAULT DESIGNATION SYMBOLS

A, B, C, ETC	LOCATION
1	DISCONTINUITY
2	CORRELATION
3	DIFFRACTED OR SPURIOUS ENERGY
4	KNOWN
5	ABNORMAL DIP
6	TRAVERSE MISCLASURE
7	GEOLOGIC CONCEPT
8	NR RECORDS
N	NORMAL FAULT
R	REVERSE FAULT
T-400	THROW
75°	DIP OF FAULT
SP 10	DIFFRACTED OR SPURIOUS ENERGY



LEGEND

P	POOR
VP	VERY POOR
NU	NOT USEABLE AT MAPPED HORIZONS
NR	NO REFLECTIONS
NS	NOT SHOT
(-2055)	DEPTH PROJECTED
-2055	NEW OR REVISED DATA
① ②	PROPOSED TRAVERSE & SHOOTING SEQUENCE
-X-	MIGRATING LINE & POSITION OF DEPTH POINT
(MAX)	APPROXIMATE OUTLINE MAXIMUM RESIDUAL GRAVITY ANOMALY
(MIN)	APPROXIMATE OUTLINE MINIMUM RESIDUAL GRAVITY ANOMALY

DISTRIBUTION

N.Y.	DEN.	FILE	(DISTRICT)

CLASSES

1	2	3	4

FIELD PARTY MONTHS

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2 of 2

TE 5578

TEXACO EXPLORATION COMPANY
CALGARY ALBERTA CANADA

PROJECT MAP
LA BICHE (1970) PROJECT
YUKON, N.W.T., B.C. CANADA

BOUGUER GRAVITY
($k = 0.0650 \text{ mgl/ft}$)

CONTOUR INTERVAL: 0.20 MILLIGALS J.D.B. PALMIERE, INTERPRETATION
SCALE: 1 IN. = 1 ML. SEISMIC PARTY NO. 81
DATUM: SEA LEVEL R.J. BADEN, DIST. GEOPH.
DATE: DECEMBER, 1970 B.A. SKINNER, CO-ORD. GEOL.

TELEDYNE EXPLORATION LTD.

G-1
ELEV 2629 KB
PMPN -141
MISS SH -3254
DET -7549
M DEV CARB -8125
T.D. 14762

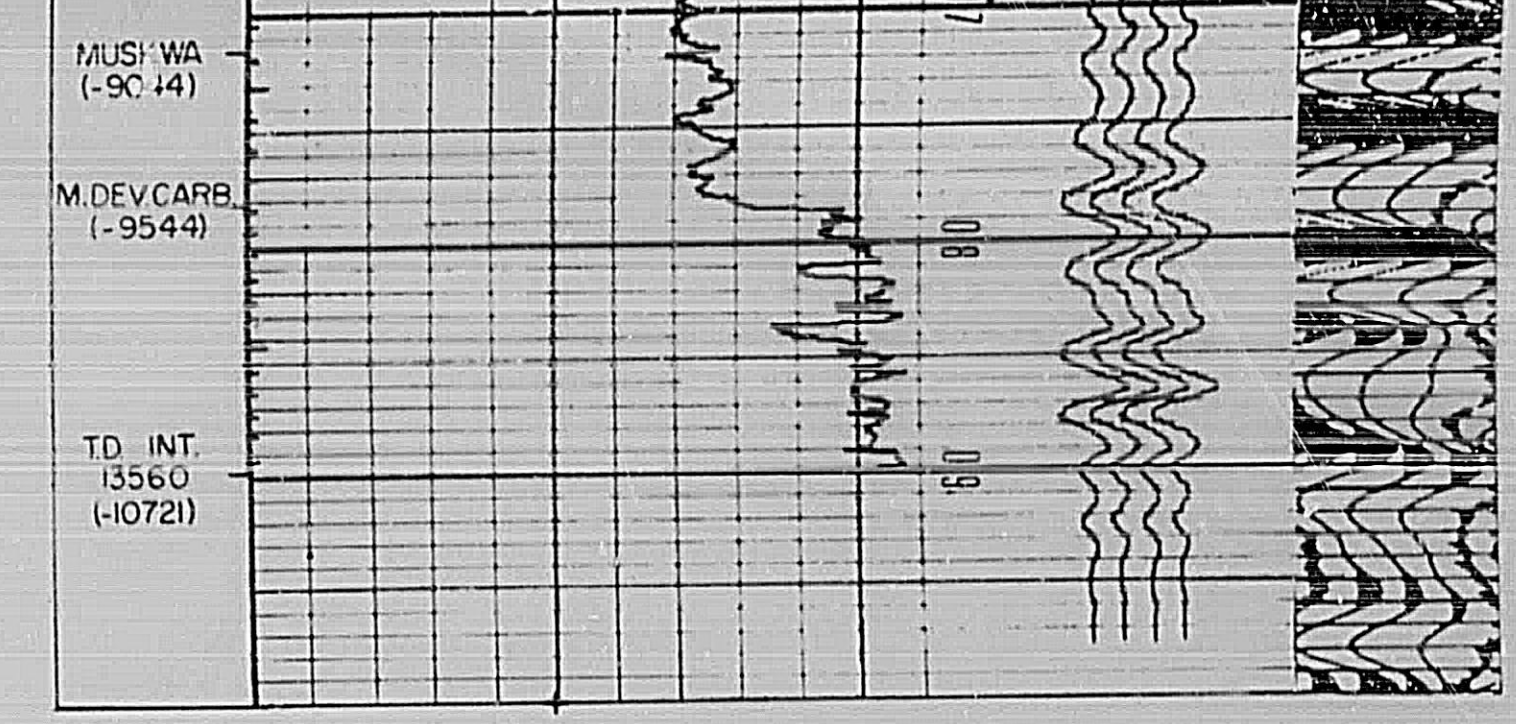
d-73-K
ELEV 2839 KB
PMPN -141
MISS SH -3254
DET -7549
M DEV CARB -8125
T.D. 14762

d-64-K
ELEV 2629 KB
PMPN -141
MISS SH -3254
DET -7549
M DEV CARB -8125
T.D. 14762

c-45-K
ELEV 2229 KB
PMPN -141
MISS SH -3254
DET -7549
M DEV CARB -8125
T.D. 14762

c-27-K
ELEV 1973 KB
PMPN -141
MISS SH -3254
DET -7549
M DEV CARB -8125
T.D. 14762

b-19-K
SC INFO
ELEV 2095 KB
T.D. 14073

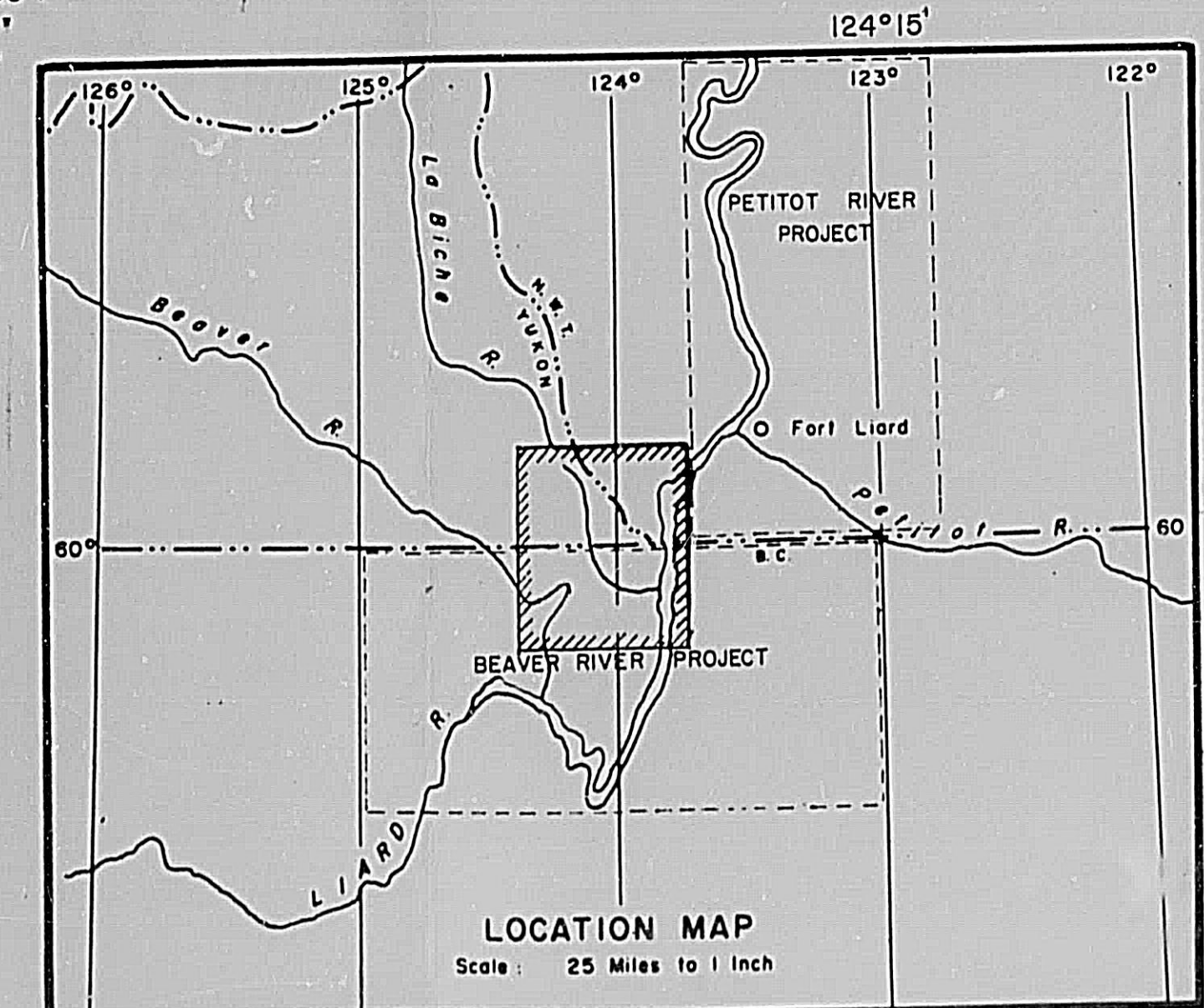


PAN AM A-2 BEAVER RIVER d-73-K



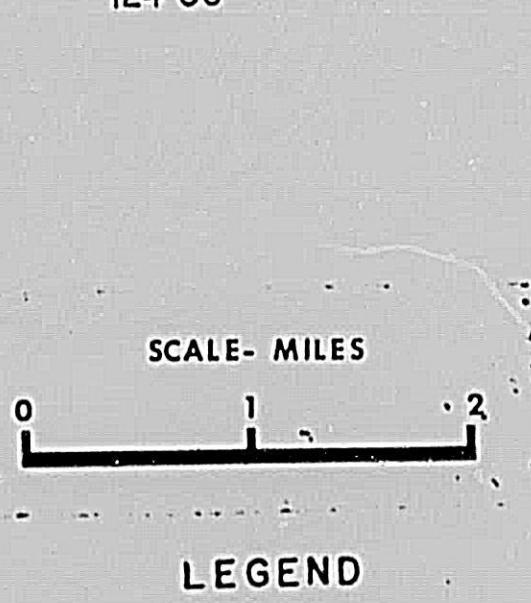
2 of 2

TE 5579



FAULT DESIGNATION SYMBOLS

A, B, C, ETC	LOCATION
1	DISCONTINUITY
2	CORRELATION
3	DIFFRACTED OR SPURIOUS ENERGY
4	KNOWN
5	ABNORMAL DIP
6	TRAVERSE MISCLASURE
7	GEOLOGIC CONCEPT
8	NR RECORDS
N	NORMAL FAULT
R	REVERSE FAULT
T-400	THROW
75°	DIP OF FAULT
SP 10 30° 3000	DIFFRACTED OR SPURIOUS ENERGY



LEGEND

P	POOR
VP	VERY POOR
NU	NOT USEABLE AT MAPPED HORIZONS
NR	NO REFLECTIONS
NS	NOT SHOT
(-2055)	DEPTH PROJECTED
-2055	NEW OR REVISED DATA
① ②	PROPOSED TRAVERSE A SHOOTING SEQUENCE
X	MIGRATING LINE & POSITION OF DEPTH POINT
(MAX)	APPROXIMATE OUTLINE MAXIMUM RESIDUAL GRAVITY ANOMALY
(MIN)	APPROXIMATE OUTLINE MINIMUM RESIDUAL GRAVITY ANOMALY

DISTRIBUTION			
N.Y.	DEN.	FILE	(DISTRICT)

CLASSES				FIELD PARTY MONTHS
1	2	3	4	

TEXACO CALGARY	EXPLORATION ALBERTA	COMPANY CANADA
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PROJECT MAP
LA BICHE (1970) PROJECT
YUKON, N.W.T., B.C. CANADA

RESIDUAL GRAVITY

CONTOUR INTERVAL: J.D.B. PALMIERE, INTERPRETATION
SCALE: 1 IN. = 1 ML. SEISMIC PARTY NO. 81
DATUM: R.J. BADEN, DIST. GEOPH.
DATE: B.A. SKINNER, CO-ORD. GEOL.

TELEDYNE EXPLORATION LTD.



TEXACO EXPLORATION COMPANY
CALGARY ALBERTA CANADA

PROGRESS MAP
LABICHE 1969 PROJECT
YUKON N.W.T. CANADA

RESIDUAL GRAVITY

CONTOUR INTERVAL: 0.25 MGAL. M.L. BERGER, INTERPRETATION
SCALE: 2 IN. = 1 ML. GRAVITY PARTY NO. 63
DATUM: VESCHUT, DIST. GEOPH. R.H. WESTRA, CO-ORD. GEOL.
DATE: MARCH, 1970

GEOPHYSICAL SERVICE INC.

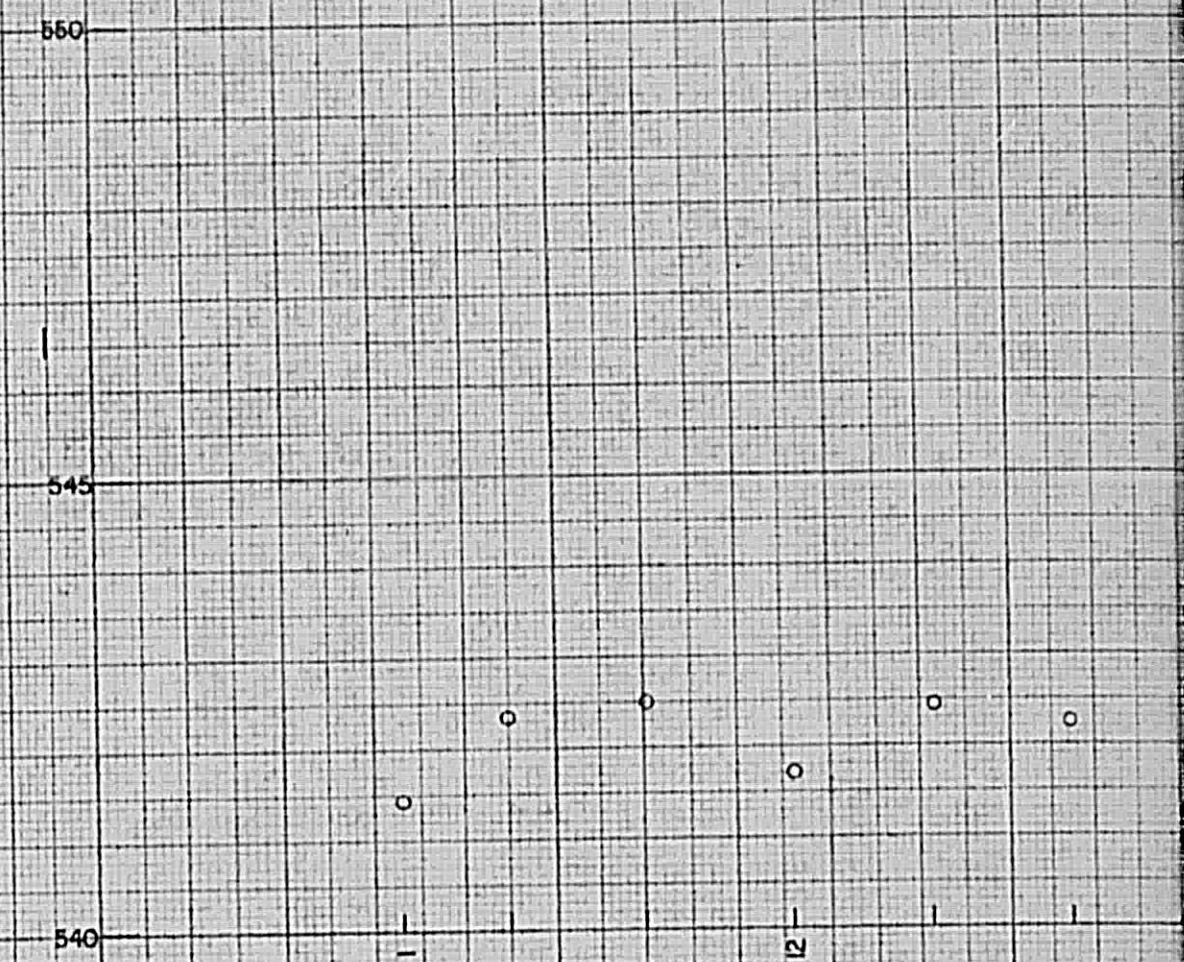
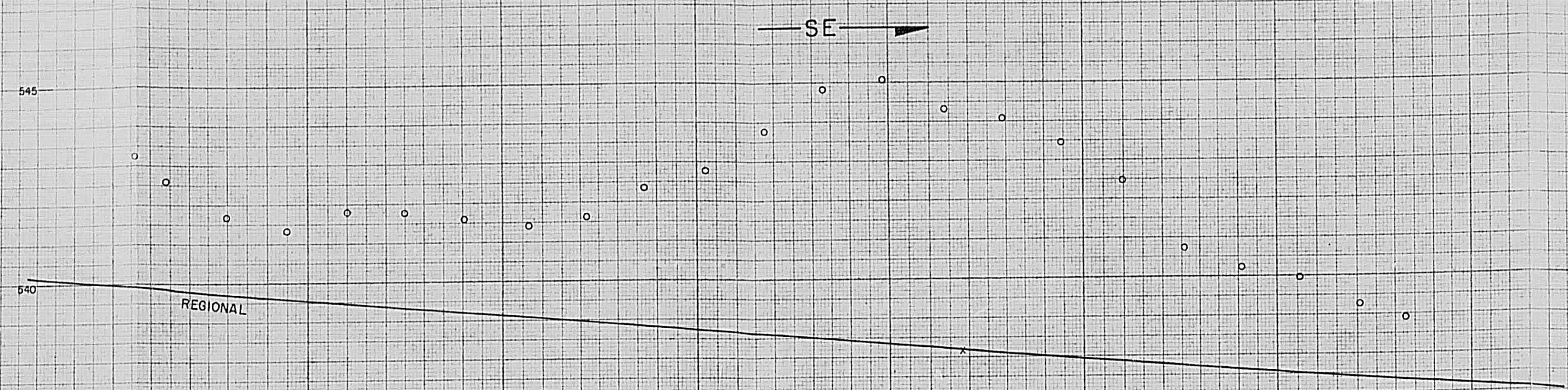
LA BICHE (1969) PROJECT

BOUGUER GRAVITY PROFILES

SCALE-MILES
S 400

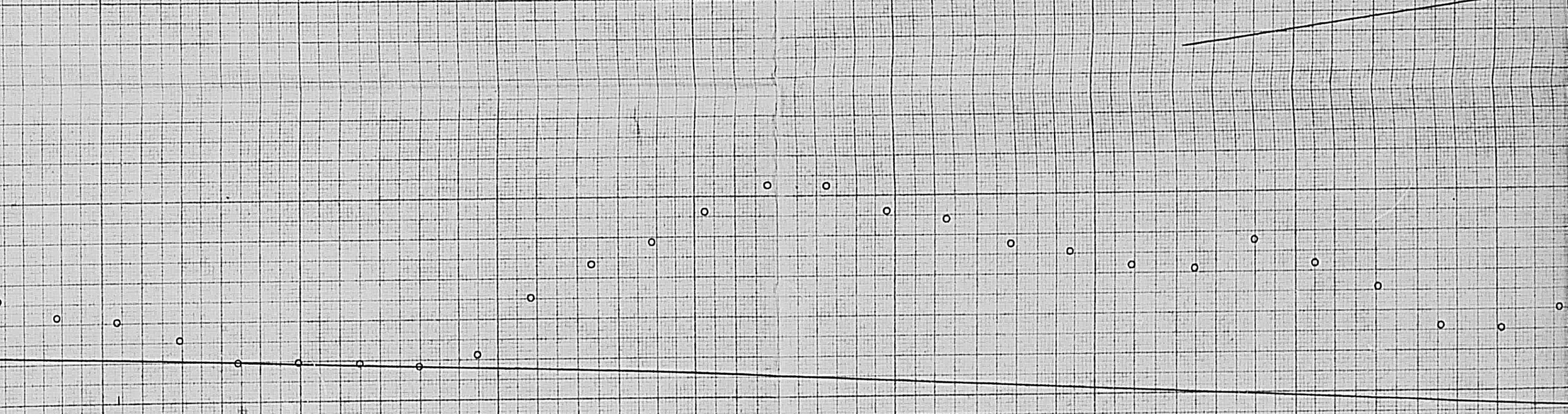
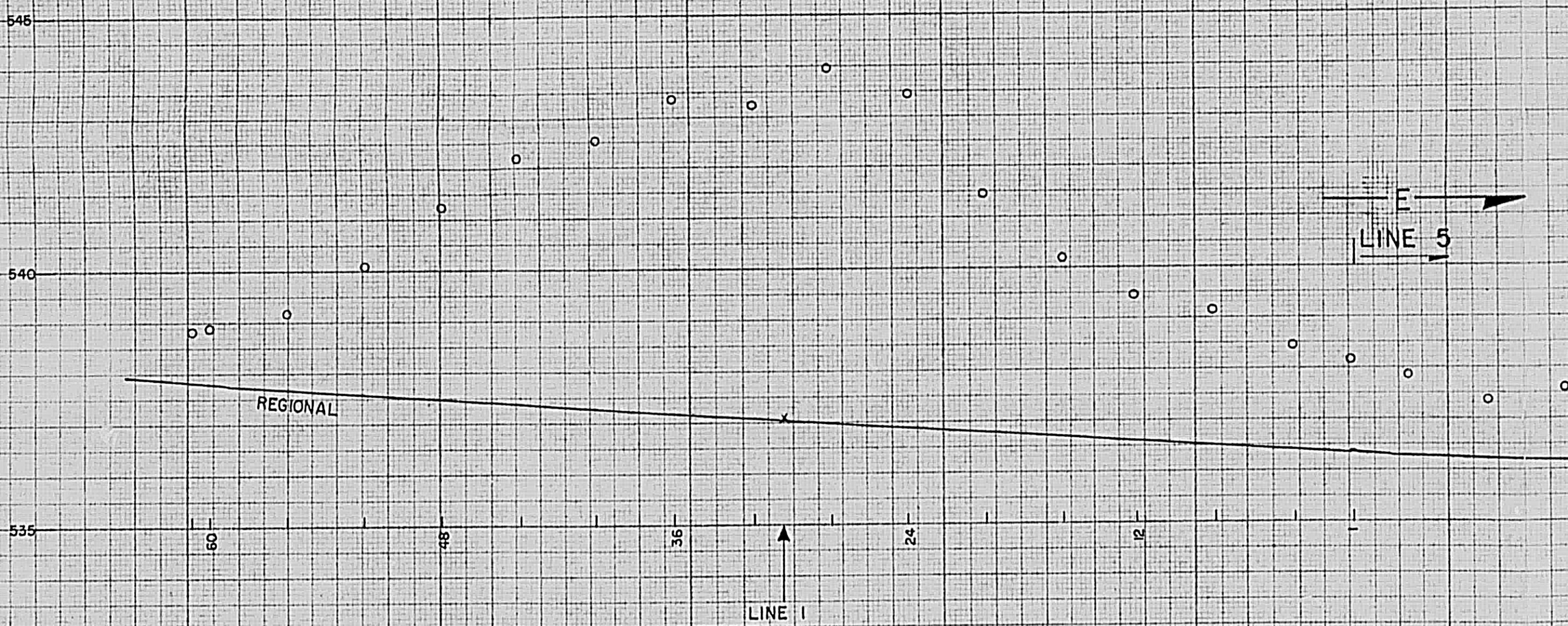
LINE 2

LINE 1

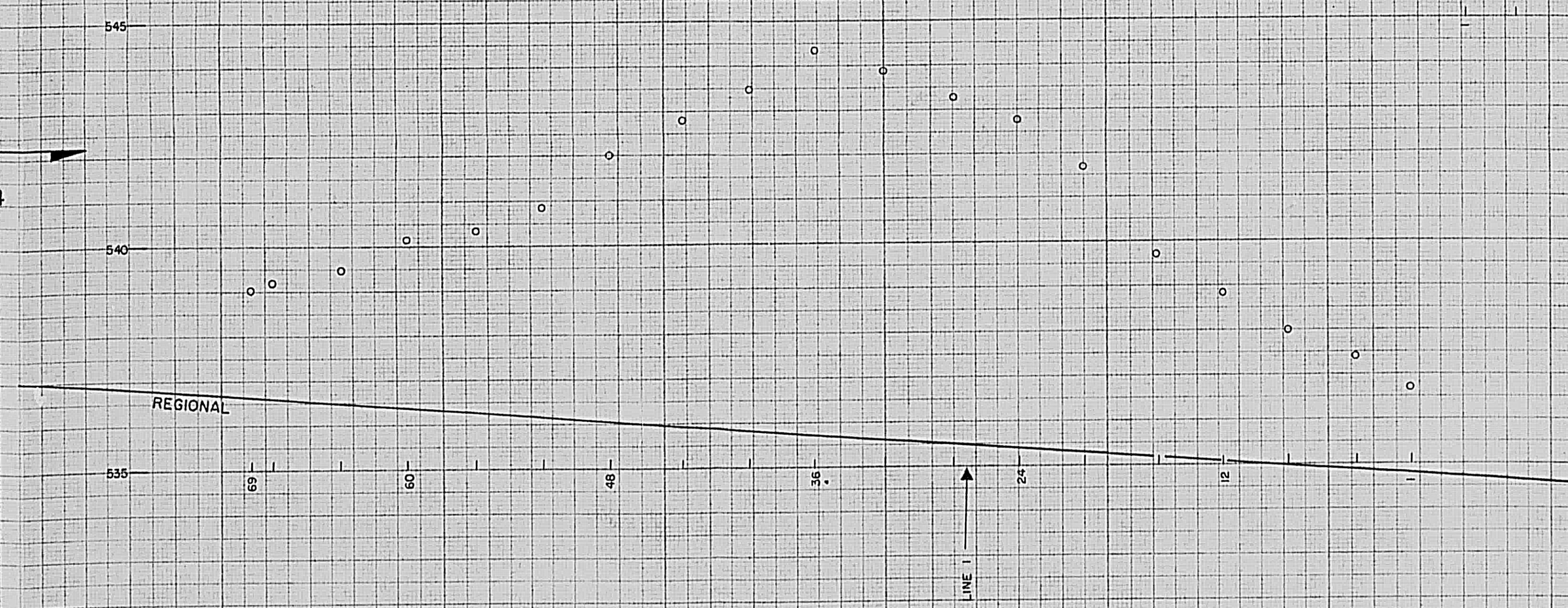


SE
LINE 3

E
LINE 5



SE
LINE 4

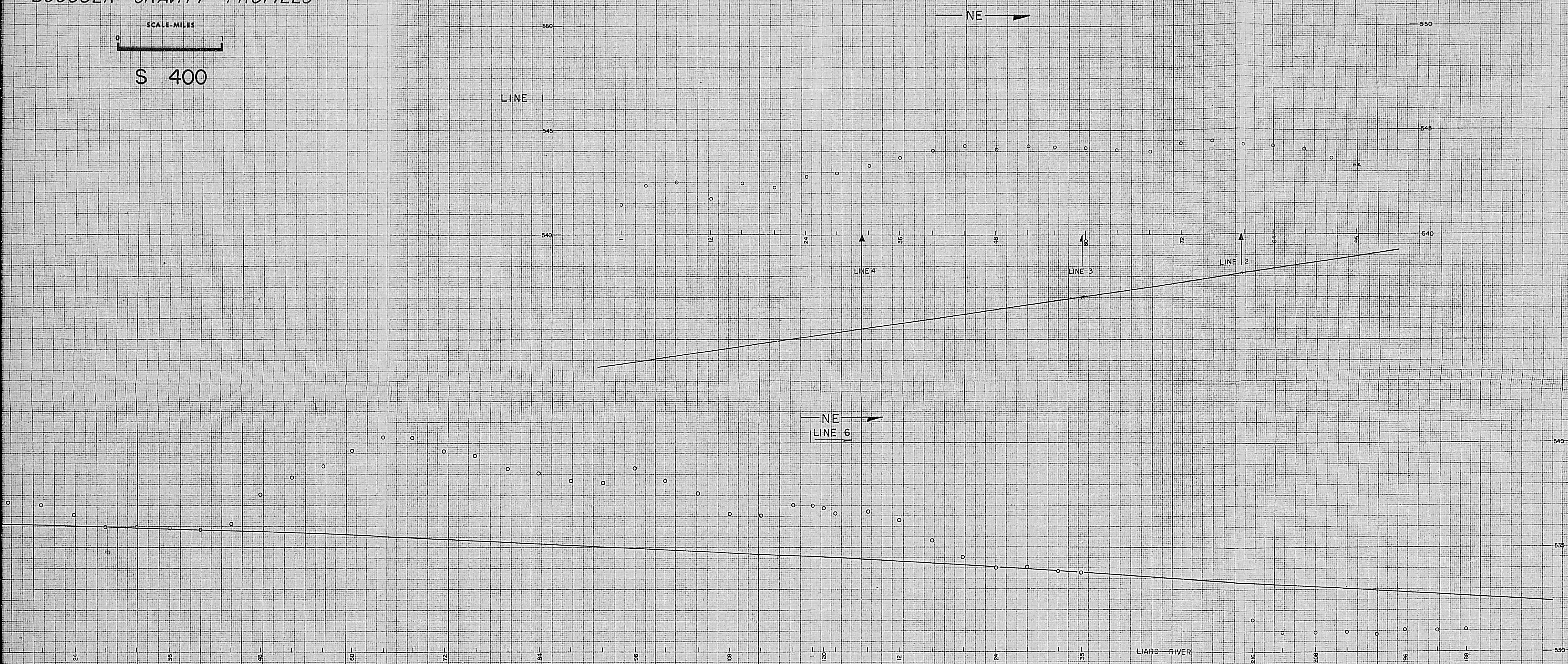


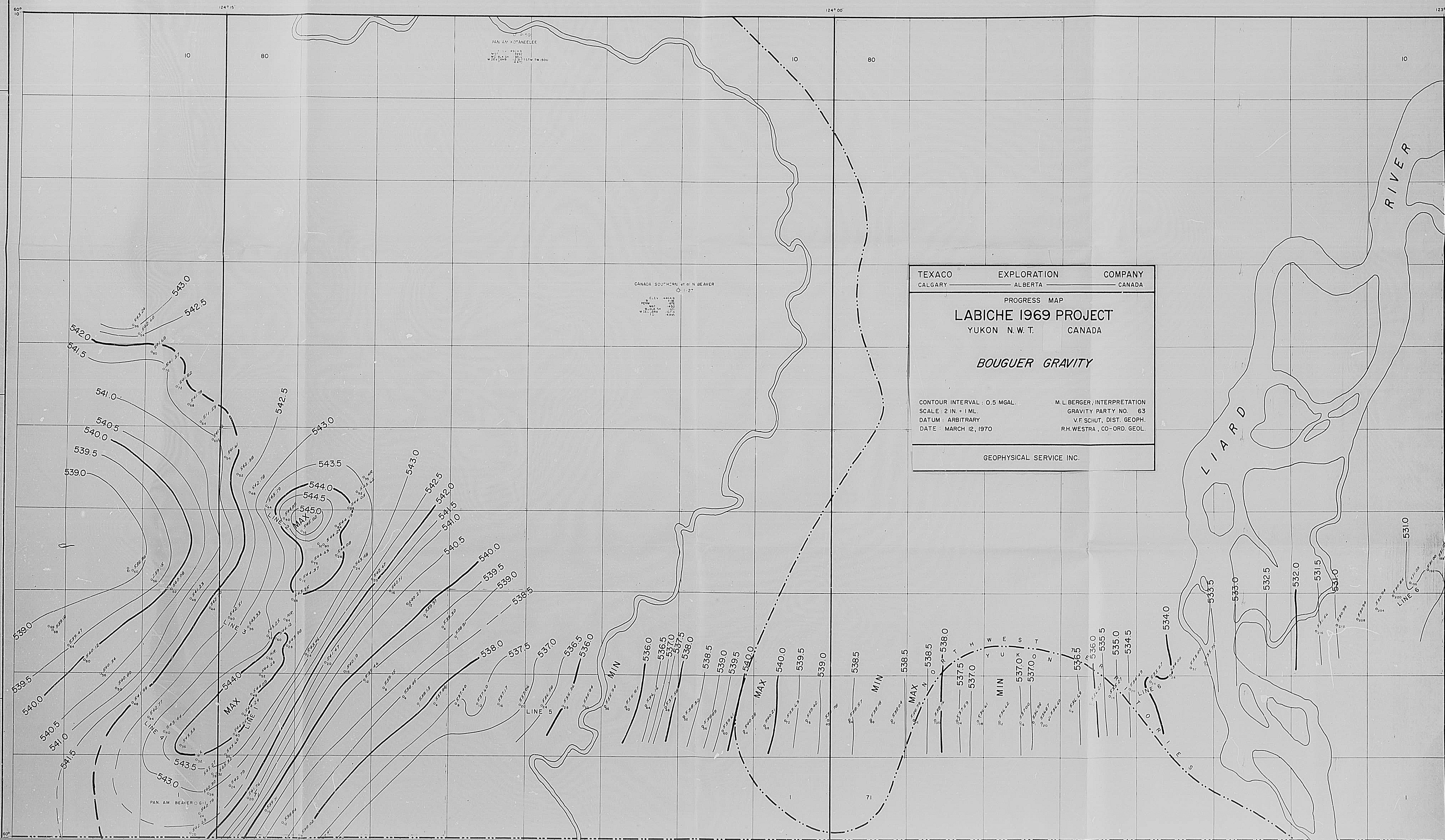
1 of

LA BICHE (1969) PROJECT

BOUGUER GRAVITY PROFILES

SCALE-MILES
0 1
S 400





TEXACO EXPLORATION COMPANY
CALGARY ALBERTA CANADA

PROGRESS MAP
LABICHE 1969 PROJECT
YUKON N.W.T. CANADA

BOUGUER GRAVITY

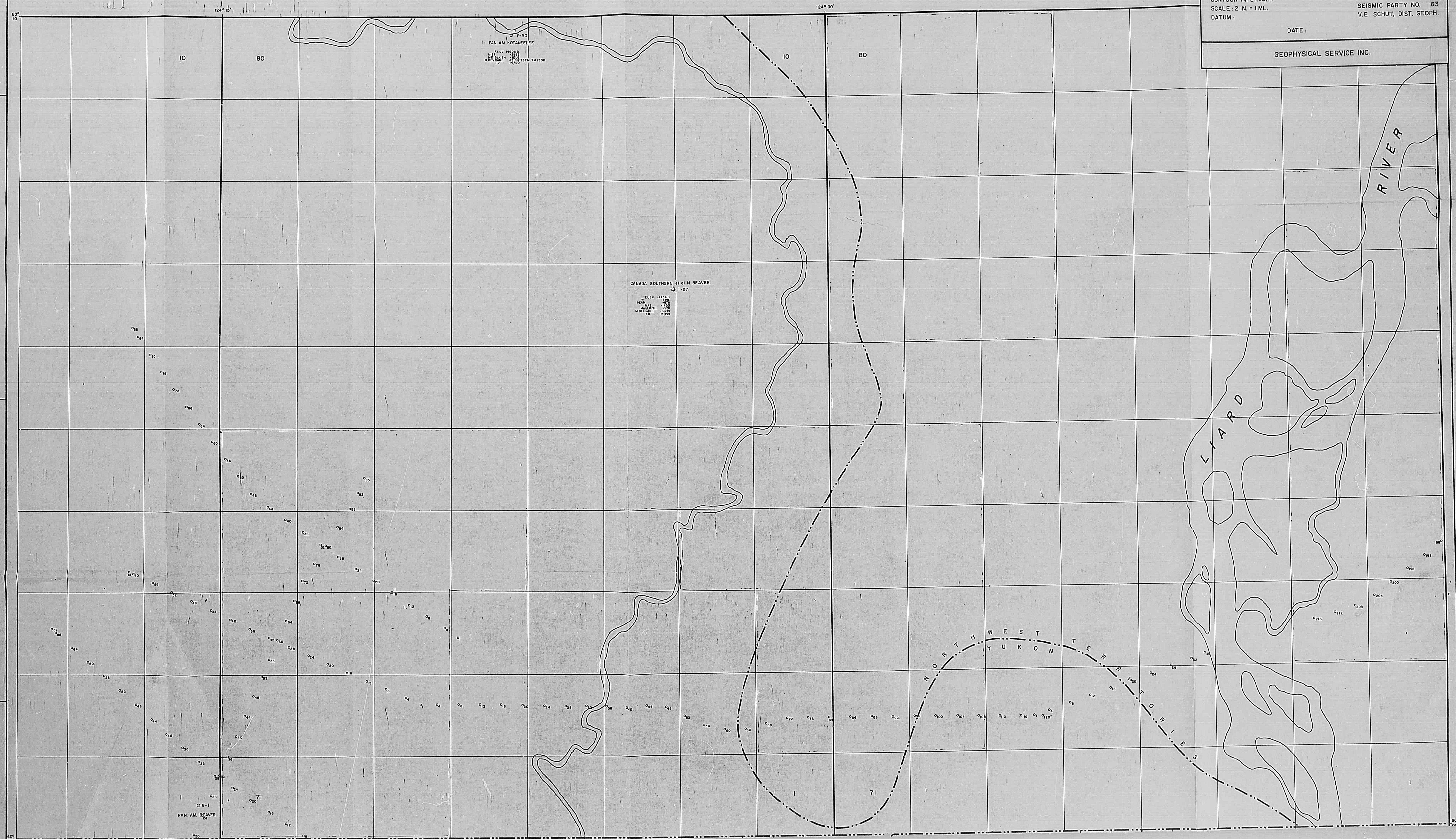
CONTOUR INTERVAL: 0.5 MGAL.
SCALE: 2 IN. = 1 ML.
DATUM: ARBITRARY
DATE: MARCH 12, 1970

M.L. BERGER, INTERPRETATION
GRAVITY PARTY NO. 63
V.F. SCHUT, DIST. GEOPH.
R.H. WESTRA, CO-ORD. GEOL.

GEOPHYSICAL SERVICE INC.

BOUGUER

TEXACO CALGARY	EXPLORATION ALBERTA	COMPANY CANADA
PROGRESS MAP		
LABICHE 1969 PROJECT		
YUKON N.W.T. CANADA		
SHOT POINT LOCATION		
* PREVIOUS PROJECT CONTOUR INTERVAL: SCALE: 2 IN. = 1 ML. DATUM:		Z. RUDOLF, INTERPRETATION SEISMIC PARTY NO. 63 V.E. SCHUT, DIST. GEOPH.
DATE:		
GEOPHYSICAL SERVICE INC.		



PROJECT MAP
LABICHE(1969)PROJECT
YUKON N.W.T. CANADA

0 PREVIOUS PROJECT

CONTOUR INTERVAL : 100 FT.

SCALE : 2 IN. = 1 ML.

DATUM : SEA LEVEL

DATE : NOVEMBER 24, 1969

Z. RUDOLF, INTERPRETATION

SEISMIC PARTY NO. 63

V F SCHUT, DIST. GEOPH.

RH:WESTRA CO-ORD. GEOL.

GEOPHYSICAL SERVICE INC.

