

REPORT OF GEOPHYSICAL AND
SEISMOGRAPH REFLECTION SURVEY

On and off Federal Permits
6275 and 6276

January 1969

Prepared by: J. L. Hudson
District Geophysicist

*Abstracted for
Geo-Science Data Index*

Date _____

REPORT OF GEOPHYSICAL SURVEY

REPORT OF SEISMOGRAPH REFLECTION SURVEY

Conducted by

Western Geophysical Company of Canada Ltd.

for

Pan American Petroleum Corporation

January 17, 1969 to January 29, 1969

North West Territory Permits 6275, 6276



Prepared By

J. L. Hudson

District Geophysicist

February 27, 1970

Submitted in support of application for credit; see affidavit made by

August 5th - 1969

1970 and in accordance with work

obligations under Section , sub-section of the Regulations.

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Enclosures: Surface Elevation Map
Spread Diagram
Top Middle Devonian Carbonate
Top Middle Devonian Carbonate - Pre-Devonian
Pre-Devonian Structure

INTRODUCTION

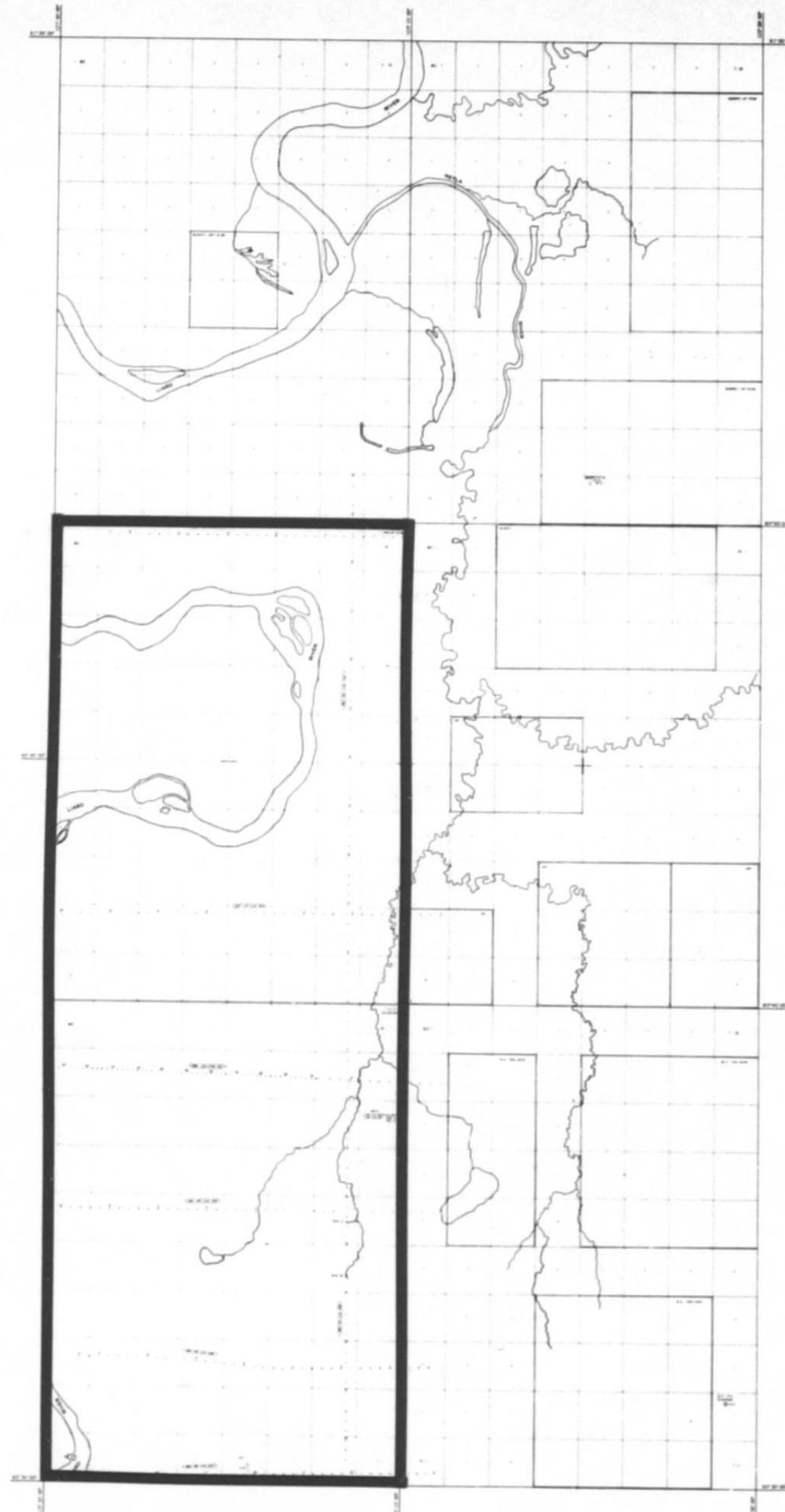
During January 1969 Western Geophysical Party #50 carried out a seismic reflection survey on behalf of Pan American Petroleum Corporation (now Amoco Canada Petroleum Company Ltd.).

The area covered was off and on Federal Permits (N.W.T.) 6275 and 6276 held by Pan American Petroleum Corporation.

A total of 12 days (January 17, 1969 - January 29, 1969) was spent in the field obtaining the data which was processed in Calgary over a period of approximately 100 days.

This work was in addition to that carried out in September 1968 (Line CCQ-001) (as submitted in a report by J. L. Hudson dated July 11, 1969). Western Geophysical Party #50 was under the supervision of Mr. E. Planck, Party Manager. Wheel mounted equipment was used throughout the survey, with the exception of track mounted drilling units.

No unusual difficulties were encountered during the course of the winter operation.



STATISTICAL DATA

A. Production

The survey consisted of six seismic lines (CCQ-002, CCQ-004 to 008). covering a total of 67 surface miles and requiring 290 shot holes drilled. The survey began January 19, 1969 and ended January 29, 1969, giving a total of 12 days thus giving an average daily production of 5.6 miles.

B. Personnel

i) Recording

1 Party Manager
1 Computer Clerk
1 Observer
1 Assistant Observer
4 Recording Helpers
2 Surveyors
2 Rodmen
1 Shooter
1 Shooter's Helper
2 Cable Truck Drivers
1 Mechanic
1 Mechanic's Helper
1 Supplyman

TOTAL 19 Men

ii) Drilling

4 Drillers
4 Drillers Helpers
3 Spare water truck drivers

TOTAL 11 Men

iii) Camp Attendants

1	Cook
1	Cook's helper
1	Camp attendant
TOTAL	3 Men

GRAND TOTAL - 33 MEN

C. Equipment

i) Western Geophysical Vehicles

- 1 Analog recorder 36 traces, wheeled
- 1 Wheeled shooting truck (1 ton)
- 2 Wheeled cable units (3/4 ton)
- 1 Party Manager's pick-up (½ ton)
- 2 Survey pick-ups (3/4 ton)
- 1 Supply unit wheeled (3/4 ton)
- 2 Conventional Western drills - tracked
- 1 Western Sewell drill - wheeled
- 1 Flite top drill - wheeled
- 2 Western water trucks - wheeled
- 1 Portable powder magazine - wheeled
- 1 Portable cap magazine

ii) Pan American Petroleum Corporation Vehicles

- 1 Fold out kitchen - sleeper - wheeled
- 1 Fold out utility - sleeper - wheeled
- 1 Power trailer - wheeled
- 1 Gas trailer (Flite rental) - wheeled
- 3 Water tractor trucks - 4 ton

iii) Bruce Rome Construction Vehicles

- 1 D6 C bulldozer

D. Mobilization and Recording Dates

The crew moved up the Simpson Trail from the Dilly Missle area into the East Flett area on existing seismic trails arriving on January 16, 1969. Shooting commenced on January 17, 1969 and the survey was completed by January 29, 1969.

E. Surveying

The survey was tied to the wellsite Murphy et al Netla M-31.

F. Conditions

No unforeseen difficulties were encountered in the area, the operation was normal for that time of year.

Field Procedure

A three hole pattern was used initially, this was changed to a single shot hole pattern with charge size varying from 1½ - 150 lbs. of dynamite. The average charge size was 10 lbs. per hole.

Shot holes varied from 45' - 120' in depth in the area. The depth of the shot was determined by near surface lithology.

Data Processing

Near surface and elevation corrections were applied to a +700' datum plane.

Normal moveout corrections, scaling (average absolute amplitude), deconvolution (800-2000 ms gate) and filtering (3-18-36-66 cps) were applied to the data.

The processing was done by Pan American Petroleum Corporation in Calgary.

RESULTS AND INTERPRETATION

The seismic survey was conducted to further delineate the structural attitude of the Middle Devonian Carbonate.

Three maps were prepared:

- 1) Top Middle Devonian Carbonate
- 2) Pre-Devonian
- 3) Top Middle Devonian Carbonate - Pre-Devonian

Interpretation of the new seismic data has shown no reversal of the general steep south dip, as was indicated by the preliminary interpretation of line CCQ-001.

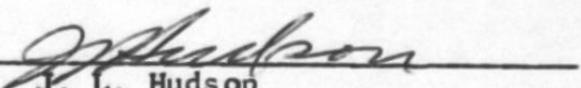
The data mapped suggests that the greatest possibility of encountering north dip, thereby producing a mappable closure would be between line CCQ-001 and 004.

The present seismic control on permit 6276 precludes an adequate evaluation. The failure of the 1969 program to show any leads tends to downgrade the permit area.

Respectfully submitted,

AMOCO CANADA PETROLEUM COMPANY LTD.

By:


J. L. Hudson
District Geophysicist

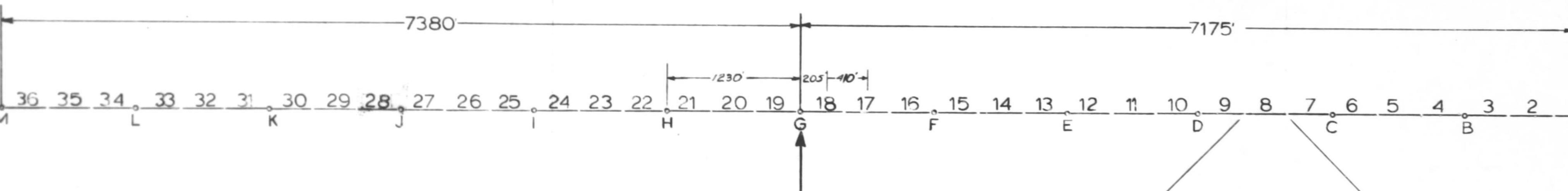
600% SYMMETRICAL

DILLY-MISSLE

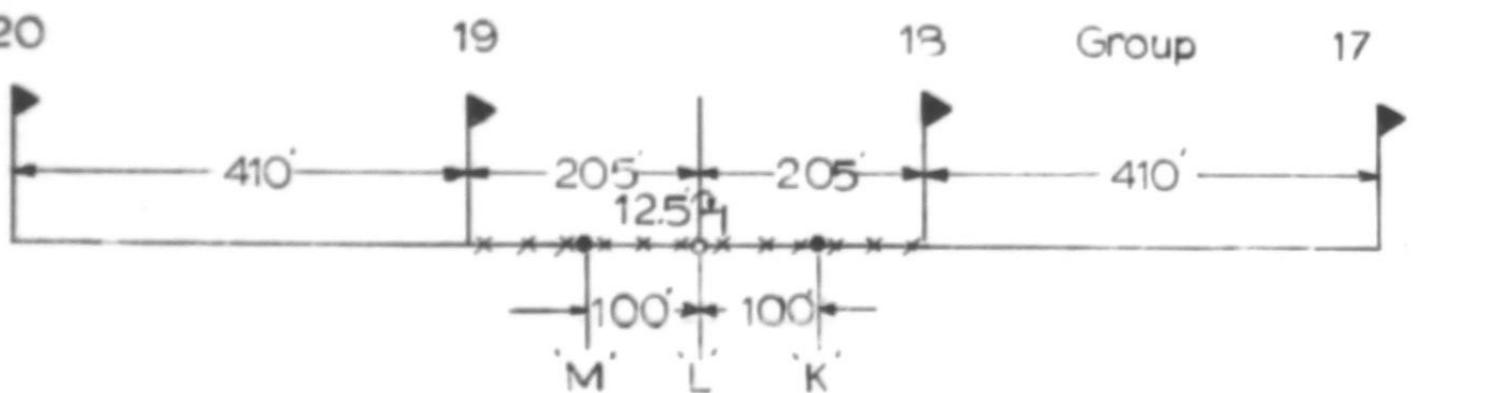
EAST FLETT

PARTY WESTERN #50

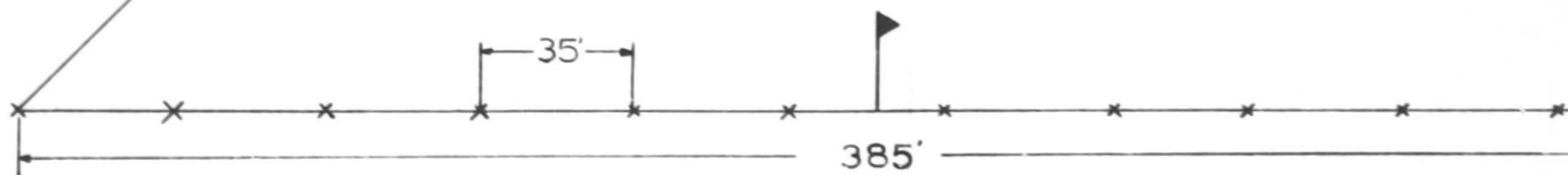
JAN-FEB 1969.

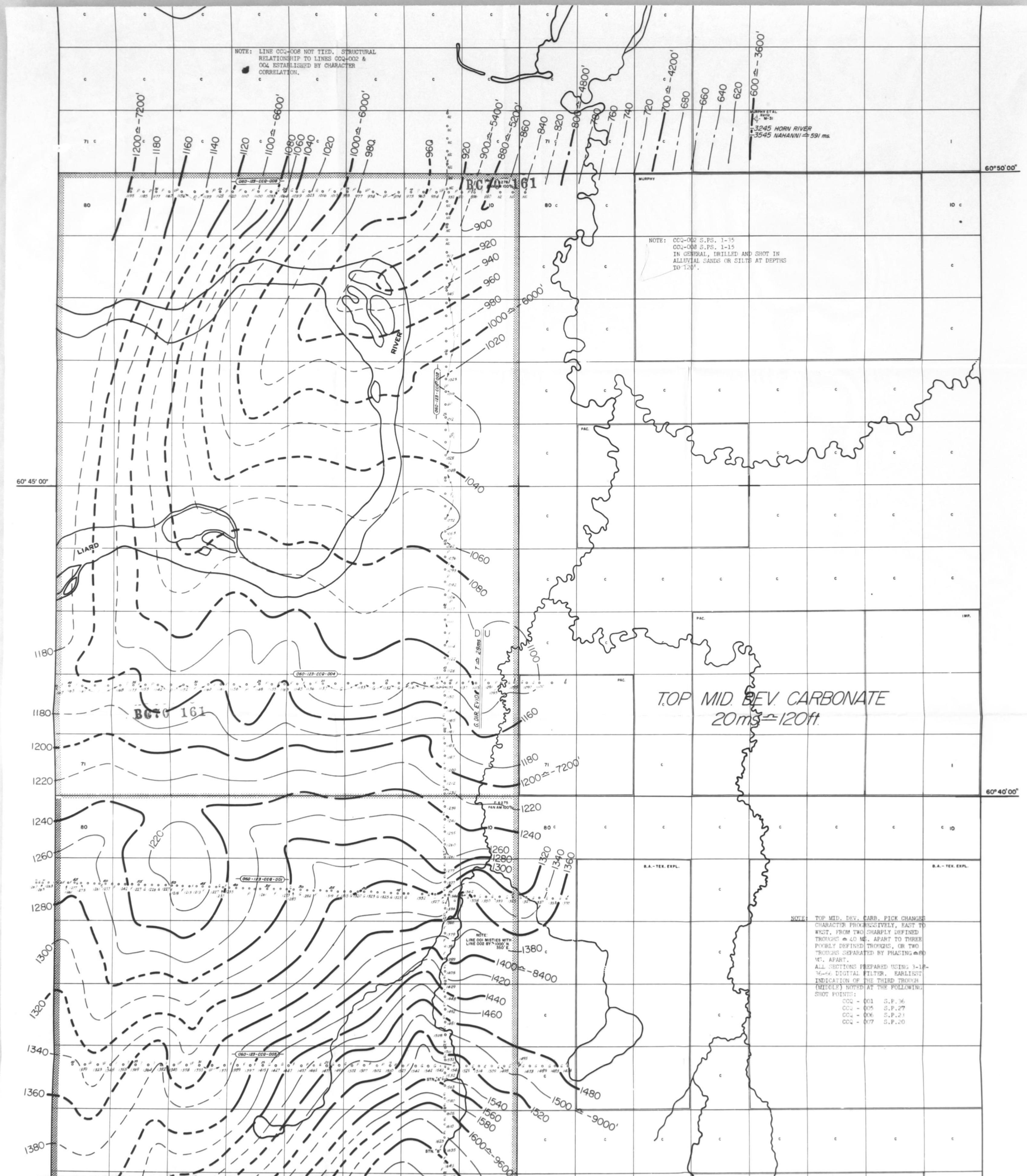


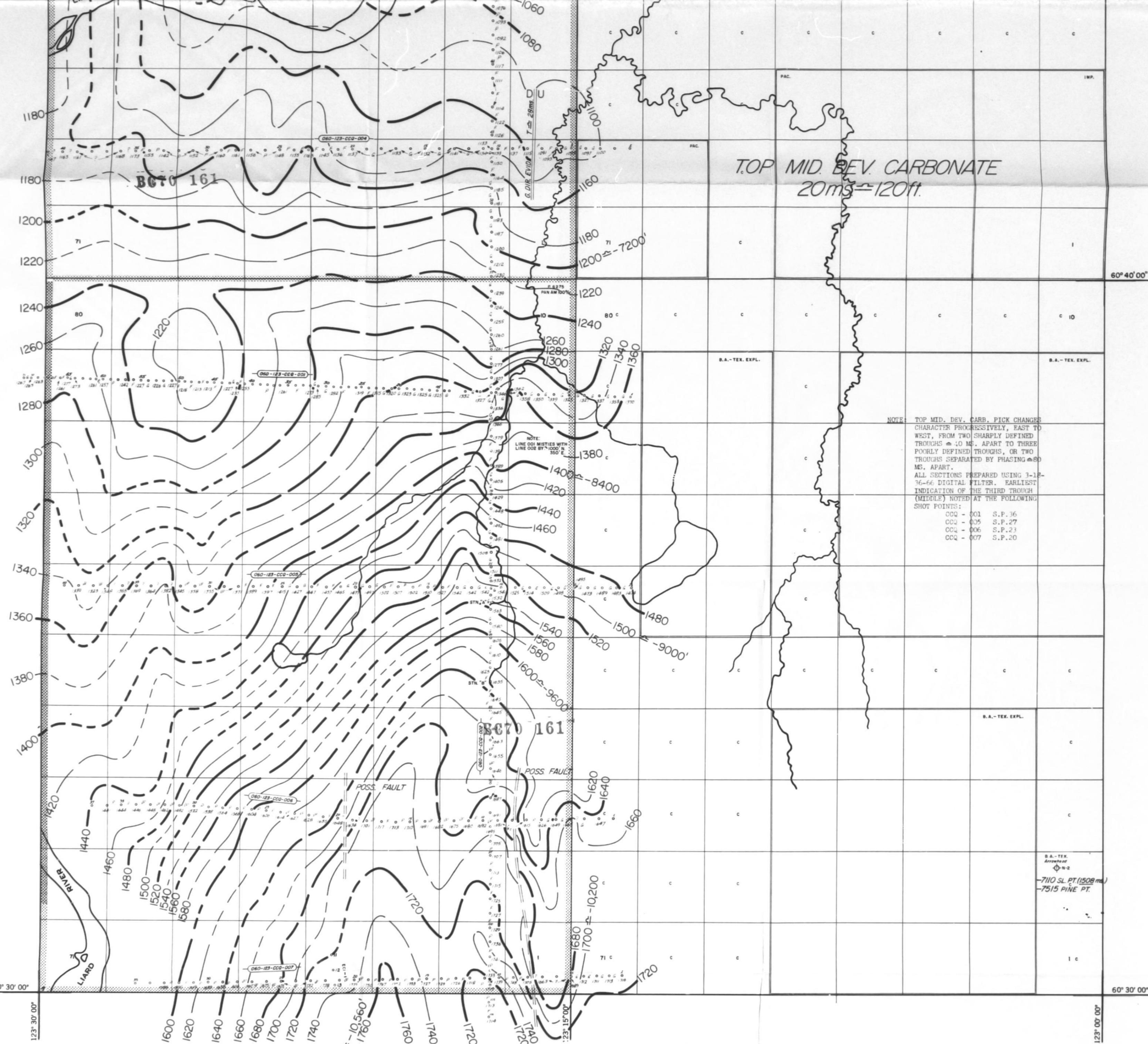
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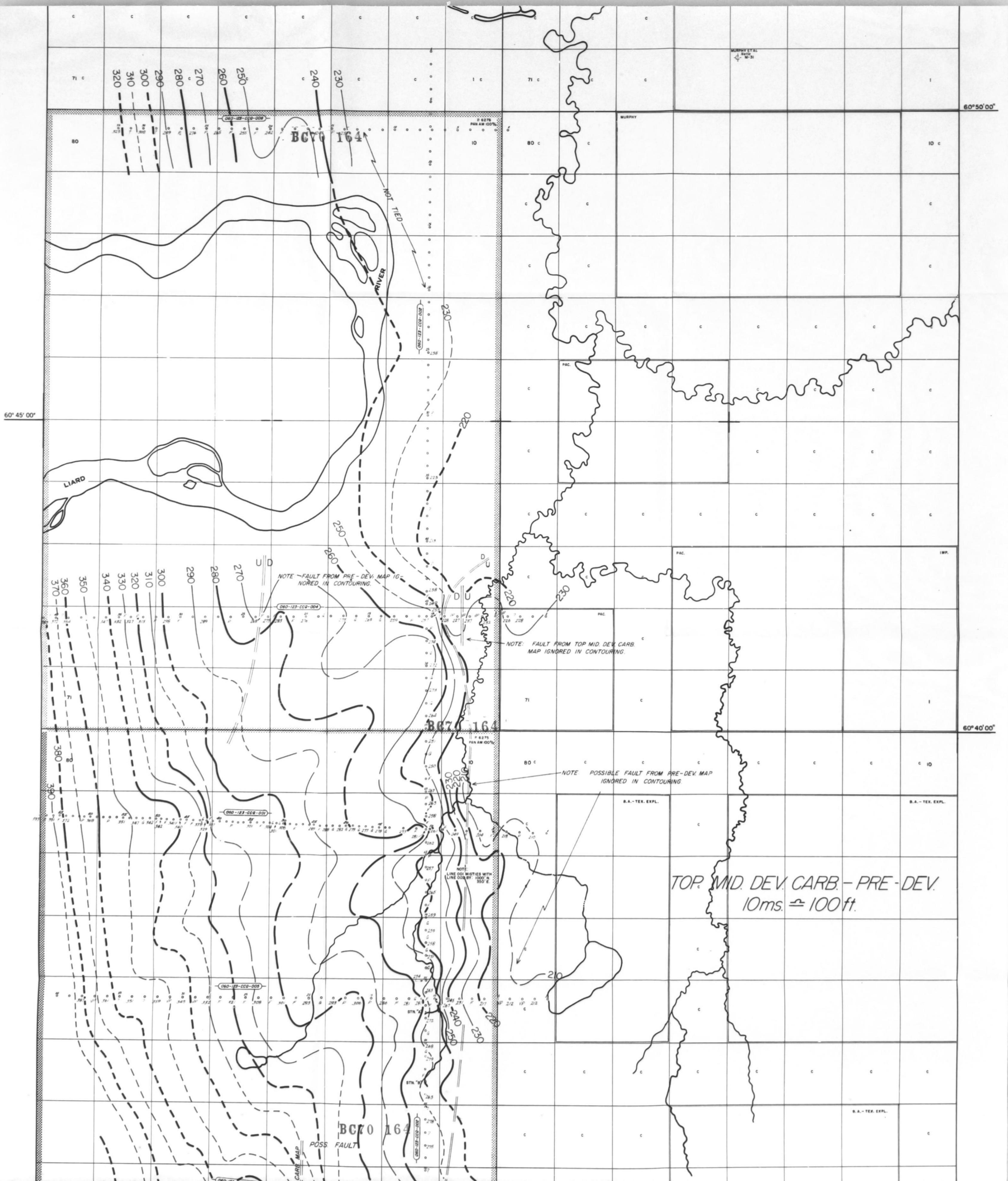
GROUP 8
12 Seismometers/group

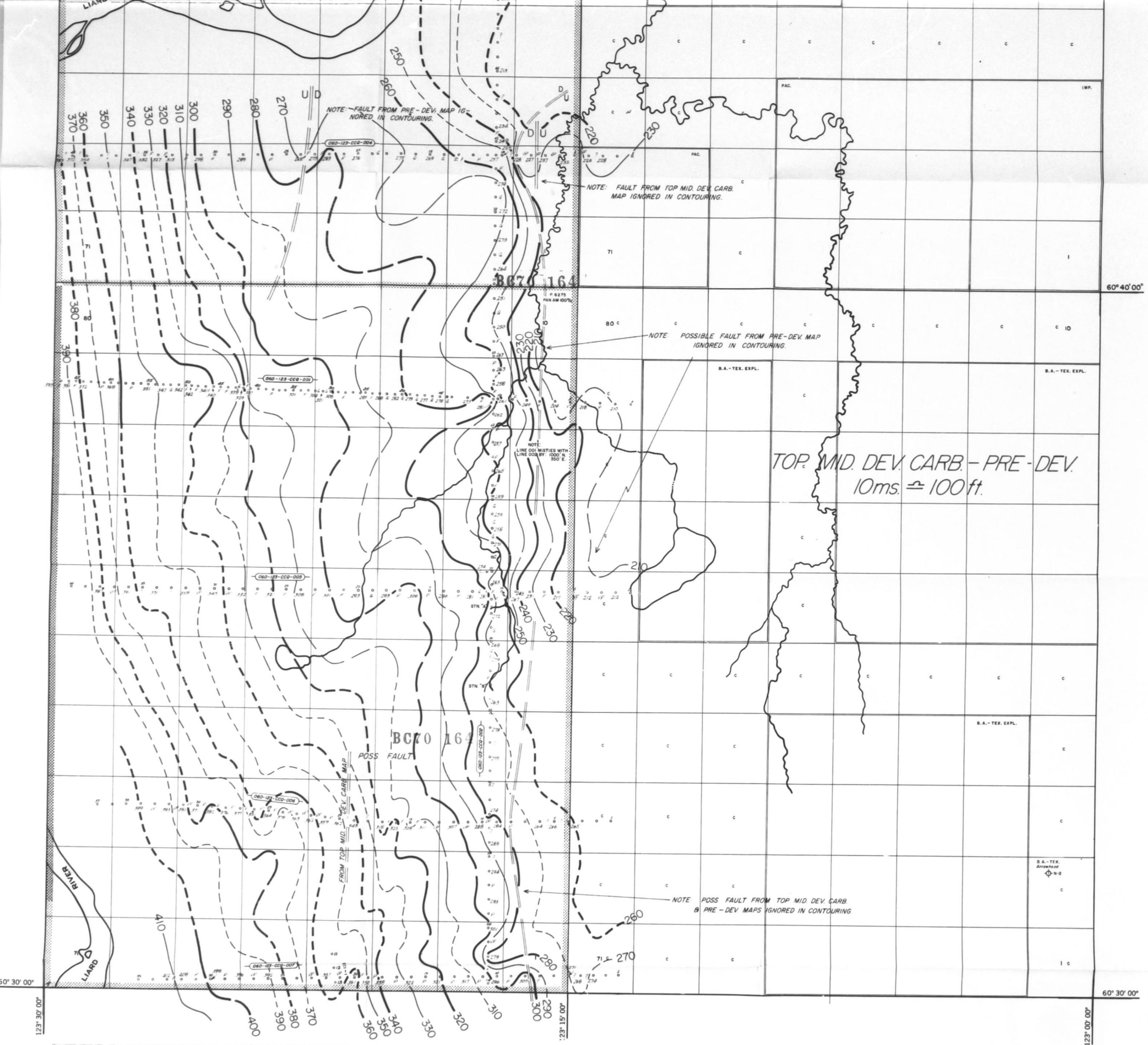






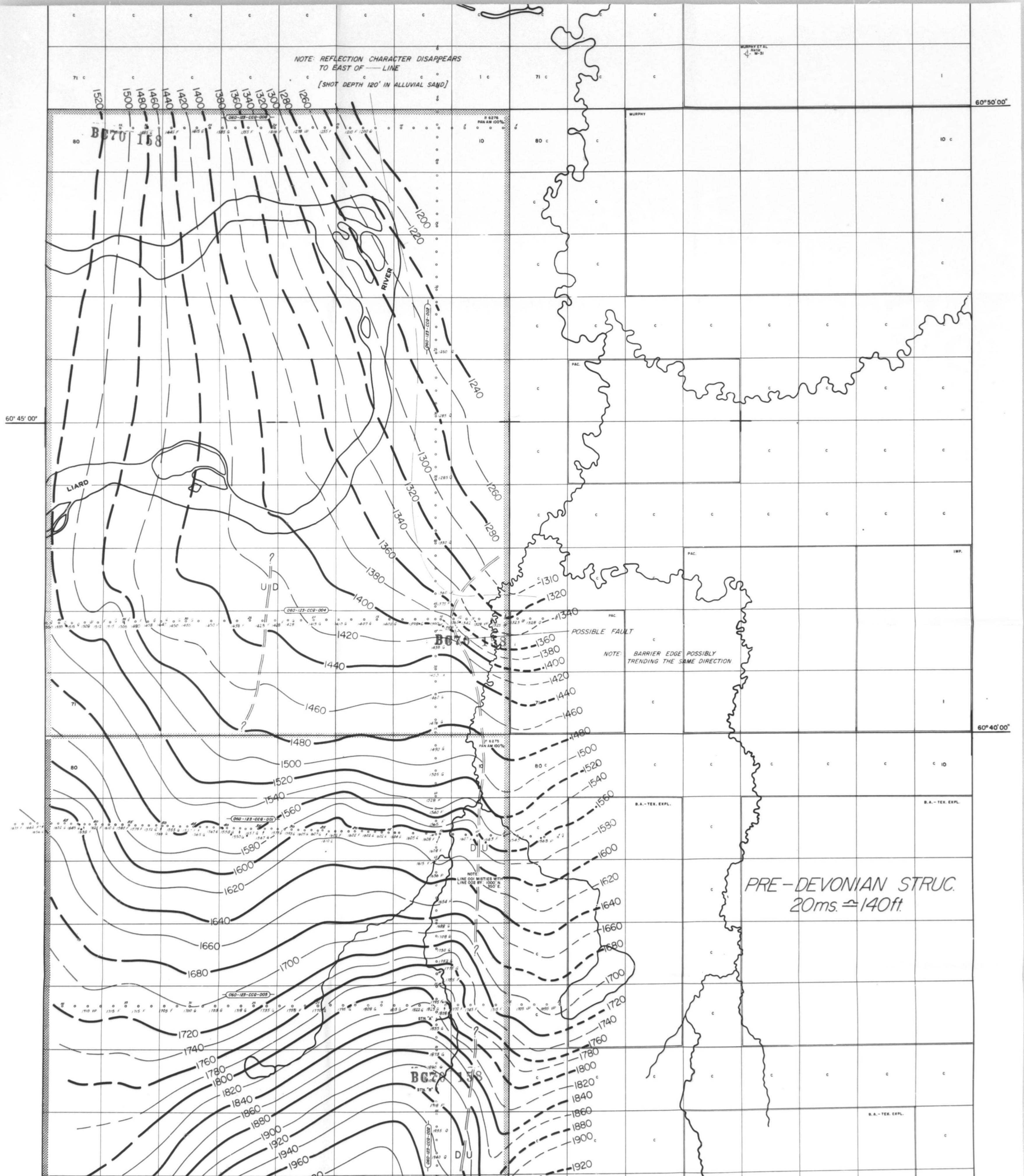
MAP EVALUATION		SHOOTING HISTORY (Not in detail)			INTERPRETIVE HISTORY		
<p>Qualification considers type of map or play, amount of relief considered critical, quality of data and density of control, (geophysical or geological)</p> <ul style="list-style-type: none"> — Geological data — Reliable Geophysical Data — Quiratively Reliable Geophysical data - - - Unreliable Geophysical Data 		<p>INCL DATES SHOT BY SHOT FOR SPAND/ OR LINE No's</p> <p>SEPT 1968 WESTERN 50 PAN AM LINE CQQ-001</p> <p>JANUARY 1969 WESTERN 50 PAN AM LINES CQQ-005, 004-006</p>			<p>FINAL REPORT No. DATE INTERP CO AFFIL APPROX LOC ON MAP</p> <p>6971 JULY 23, 1969 W. LeBAY PAN AM SW 1/4</p>		
					<p>This map replaces/supplements Registration No. _____ dated _____ which is to be destroyed/kept (After transmission dated _____)</p> <p>Map prepared by _____ Bureau _____ General Office _____</p> <p>Map prepared by _____ Bureau _____ General Office _____</p> <p>TOP MID. DEV. CARBONATE S.C.M. PRE-DEVONIAN S.C.M. TOP MID. DEV. CARB TO PRE-DEV</p> <p>This map is checked by _____ Amoco Geophysicist / Geologist _____</p> <p>All geological and geophysical data, including the interpretation thereof, appearing on this map is the property of Amoco Corporation. It is understood that the use, distribution, or reproduction thereof without the written permission of said Company is strictly prohibited.</p> <p>VELOCITY PLAT AND EFFECT OF REF PLANE AND/OR VELOCITY ON TIME MAP</p>		
					<p>AMOCO CANADA PETROLEUM COMPANY LTD.</p> <p>AREA: East Mt. Flett GRID: CM-18 N.E. PROVINCE: N.W.T. SCALE: 1:4000' HORIZON: TOP MIDDLE DEVONIAN CARBONATE TYPE OF MAP: S.C.M. CONTOUR INT. 20 ms. SHOT BY: WESTERN 50 FOR: PAN AM INCL DATES: SEPT, 1968 & JAN, 1969 INTERP BY: W. LeBAY CO AFFIL: PAN AM REPORT No: 6971 DATE: JULY 23, 1969 REMARKS: BC70 161</p> <p>GEOLOGICAL INT: R.L. PEMBERTON DATE: JULY 23/69 FROM GEOPH REPORT No(s) DATED</p> <p>REMARKS:</p> <p>CLASS I</p>		

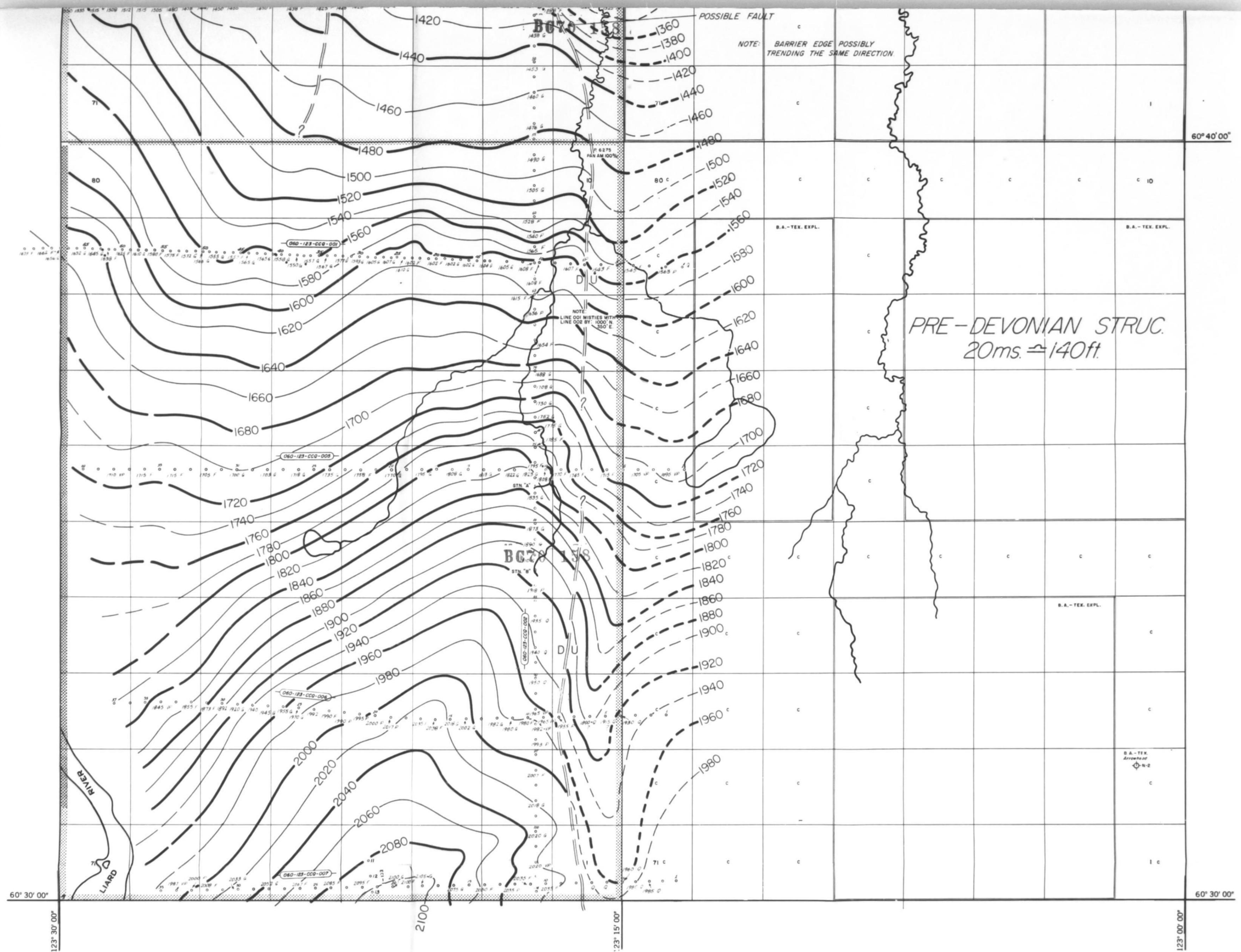




MAP EVALUATION		SHOOTING HISTORY (Not in detail)				INTERPRETIVE HISTORY					
Qualification considers type of map or play, amount of relief considered critical, quality of data and density of control, (geophysical or geological) - - - Geological data - - Reliably Geophysical Data - - - Qualitatively Reliable Geophysical data - - - Unreliable Geophysical Data		INCL DATES	SHOT BY	SHOT FOR	SP AND/OR LINE No's	FINAL REPORT No.	DATE	INTERP	CO AFFIL.	APPROX LOC ON MAP	
		SEPT 1968	WESTERN 50	PAN AM	LINE CCG-001	6371	JULY 23, 1969	W. LeBAY	PAN AM	EM-4	
		JANUARY 1969	WESTERN 50	PAN AM	LINE CCG-008, 009-009						
This map represents/represents/Registration No. _____ dated _____ which is to be destroyed/lost (Refer to transmittal dated _____) Map description: <input type="checkbox"/> Division <input type="checkbox"/> General Office HORIZON: TOP MID DEV CARB. - PRE-DEV. TYPE OF MAP: ISOCRON CONTOUR: 10ms. SHOT BY: WESTERN 50 FOR: PAN AM INCL DATES: SEPT, 1968 & JAN, 1969 INTERP BY: W. LeBAY CO AFFIL: PAN AM REPORT No: 6371 DATE: JULY 23, 1969 REMARKS: BC70 164 GEOLOGICAL INT: R.L. PEMBERTON DATE: JULY 23/69 FROM GEOPH. REPORT No(s) DATED REMARKS:											
LEGEND <ul style="list-style-type: none"> • Concentric Survey • C.V.L. • Symmetric Record • Contoured Velocity 											

2 of 2





MAP EVALUATION

Qualification considers type of map or play, amount of relief considered critical, quality of data and density of control, (geophysical or geological)

- Geological data
- Reliable Geophysical Data
- Qualitatively Reliable Geophysical data
- - - Unreliable Geophysical Data

SHOOTING HISTORY (Not in detail)

INCL DATES	SHOT BY	SHOT FOR	SP AND/OR LINE No's
SEPT 1968	WESTERN 50	PAN AM	LINE C00-000
JANUARY 1969	WESTERN 50	PAN AM	LINE C00-000, 004-008

INTERPRETIVE HISTORY

FINAL REPORT No.	DATE	INTERP	CO AFFIL.	APPROX LOC. ON MAP
6971	JULY 23, 1969	W. LeBAY	PAN AM	SW 1/4

This map replaces/supplements Registration No. _____ dated _____ which is to be destroyed/kept (Refer to transmittal dated _____)

Map drawn by _____ Division General Office Geophysical

Map prepared in _____ Division General Office Geophysical

Top mid dev. CARBONATE S.C.M.

PRE-DEVONIAN S.C.M.

Top mid dev. carb to PRE-DEV.

<p