

REPORT OF GEOPHYSICAL
AND SEISMOGRAPH REFLECTION SURVEY

Canyon Area - Yukon Permit Nos. 6027 - 6031
February 1971 to March 1971

Prepared by: C.W. Allison
District Geophysicist

August 1971

60-6-6-119

REPORT OF GEOPHYSICAL SURVEY
REPORT OF SEISMOGRAPH REFLECTION SURVEY



Conducted by
Western Geophysical Company of Canada Ltd.
for
Amoco Canada Petroleum Company Ltd.

During the Period of February 25, 1971 to March 12, 1971

ON CANYON AREA, YUKON PERMIT NOS. 6027 TO 6031

Prepared By:
C.W. ALLISON
DISTRICT GEOPHYSICIST

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

of _____ and in
accordance with work obligations under Section 64 (F) of the Territorial
Lands Act.

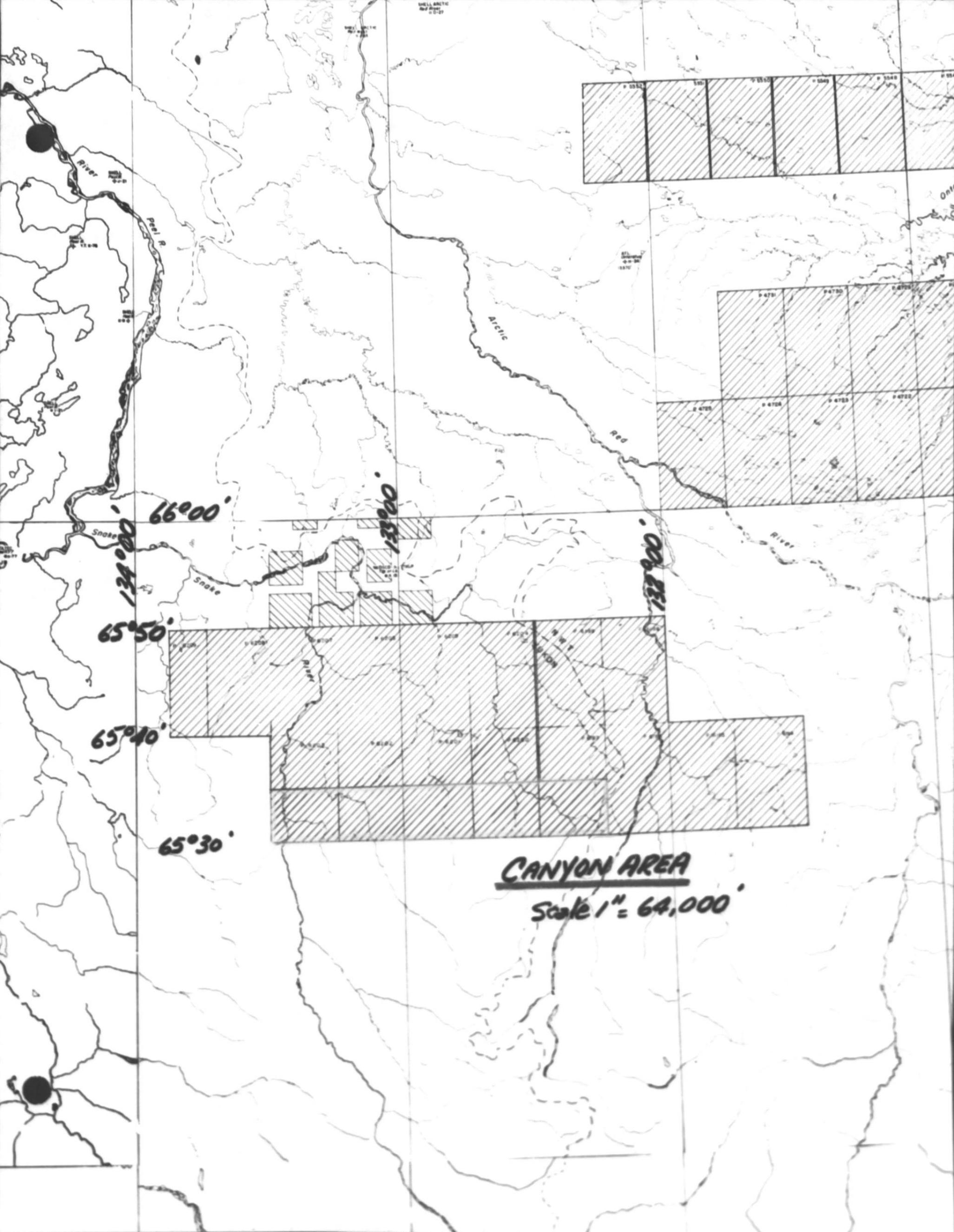
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I N T R O D U C T I O N

During the period of February 25, 1971 to March 12, 1971, a "Vibroseis" reflection seismograph survey was conducted in the Canyon Area by Amoco Canada Petroleum Company Ltd. through a seismic option on Yukon Territory Permit Nos. 6027 to 6031 held by J. Ray McDermott Co.

The survey was conducted by Western Geophysical Company of Canada Ltd. (Party V-12) for Amoco Canada Petroleum Company Ltd.



Statistical Data

Production

Party V-12 spent sixteen (16) calendar days working on seismic lines cut and cleared at the same time as the seismic work was being done. Party V-12 surveyed fifty (50) miles of multifold coverage (600%).

The location of the program is shown on the surface contour map in the pocket of the Report. Geophone, station and vibrator arrangements are shown on a spread diagram in the pocket.

The average daily production was approximately 3.5 miles per day. Weather down time and equipment down time was insignificant, but moving time to the widely spread program cut down production.

Western Party V-12

The contract crew was under the supervision of J.T. Coull and party managed by R. Dobson.

Track mounted equipment consisted of a digital recorder, two dual vibrator units, two cable trucks, a supply unit, a water truck-personnel carrier and a party manager's unit.

The track mounted camp consisted of four expandable trailer units and a power work shop.

The seismic line cutting and clearing was done by MacMillan Construction of Peace River, Alberta and consisted of a portable camp, fuel sleighs and three bulldozers.

The operation was supported by fixed wing aircraft out of Norman Wells, N.W.T. and a helicopter stationed on the crew.

Crew Personnel

1 Party Manager
1 Computer Clerk
1 Observer
1 Assistant Observer
1 Surveyor
1 Assistant Surveyor
2 Surveyor's Helpers
1 Mechanic
1 Mechanic's Helper
3 Vibrator Operators
2 Cable Truck Drivers
4 Recorder Helpers
1 Cook
1 Cook's Helper
1 Camp Attendant
1 Night Man

23 TOTAL MEN

Surveying

The survey was conducted using a Wilde Theodolite T1A and steel tapes, and was tied into government triangulation stations, the previous years seismic control and tellurometer survey.

Field Procedures

All the lines were surveyed using the "Vibroseis" technique obtaining 600% multifold coverage.

The vibrator energy source at each shotpoint consisted of two vibrator units, with each unit consisting of a front and back mounted Wabco Y-600D vibrator. The two vibrator units were separated by 85 feet and moved 240 feet in 16 sweeps, giving a total vibrator pattern of 325 feet.

The vibrating points were 650 feet apart, while the geophone stations were 325 feet apart with 9 geophones (Mark L-10B-8 cps) per group. A 56-14 cps pilot was used for a 7 second duration.

The 24 channel data was digitally recorded on 9 track magnetic tapes in the Western format, using binary gain through SDS-1010 amplifiers and summed in a Western summer. Random analogue correlations were made in the field for quality control.

Data Processing

The data processing was performed by Amoco Canada Petroleum Company Ltd. and by Geodigit in Calgary.

The digital field tapes were cross correlated, edited and programmed into structural sections with elevation corrections applied to a +2000 datum using a 10,000 feet/second replacement velocity.

Normal moveout, trace muting, frequency filtering, deconvolution, trace equalization and stacking were applied to the data.

Time migrated sections were made on some of the lines.

Results and Interpretation

Record quality in the area is generally fair in the central and eastern portions of the program, and very poor to the west probably due to the shallow section. The data that appears on the subsurface maps are vertical two way structural times between the datum and the horizon mapped.

The objective geological zone is the Mid Devonian Carbonates. The Top of Carbonate (Hume) map is therefore the main map. In the eastern portion of the area, this map shows an east west trending structure, with steep north dip out from the MacKenzie Mountains and major faulting. To the west there are indications of steep dip and faults, but no Top of Carbonate reflection is identified because of the shallow section.

Respectfully submitted by
AMOCO CANADA PETROLEUM COMPANY LTD.

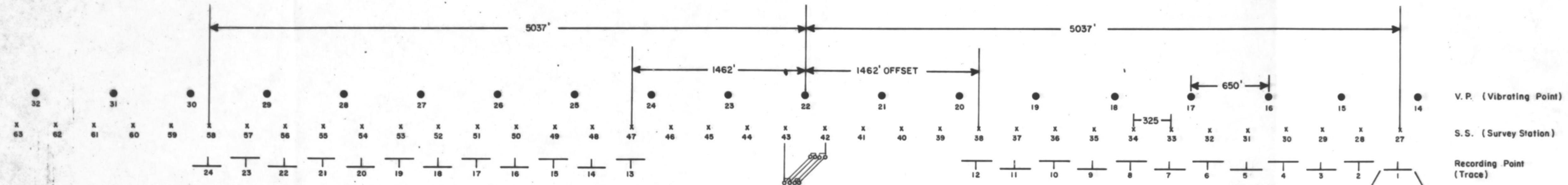


C.W. Allison
District Geophysicist

CANYON AREA

WESTERN V-12 VIBROSEIS
FEB.-MARCH '71
600% SYMMETRICAL SPREAD

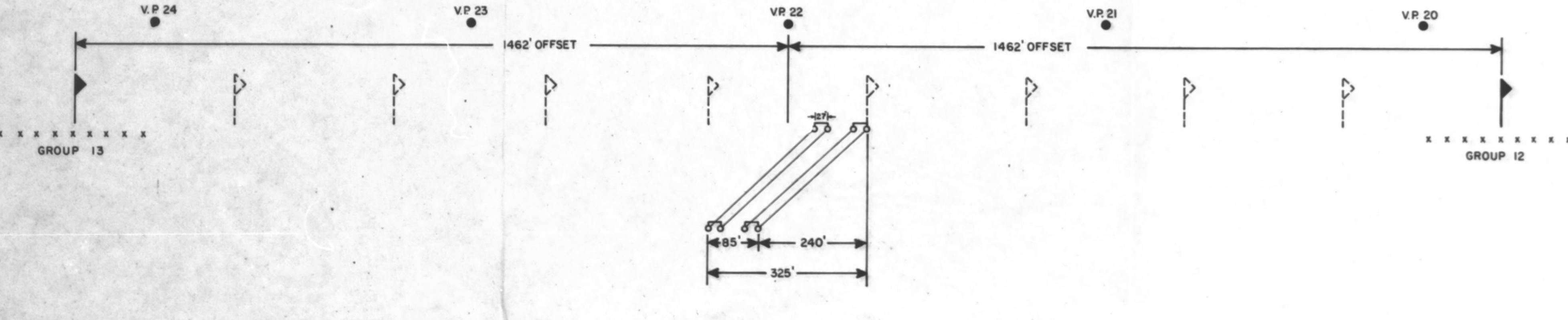
Scale 1" = 650'



VIBRATOR PATTERN
(DETAIL)

Scale 1" = 200'

4 VIBRATORS TAKING 16 SWEEPS COVERING 240' = 16'
BETWEEN SWEEPS WITH 1462' OFFSET.



9 GEOPHONES/GROUP
GEOPHONES 36' APART.