

REFLECTION SEISMIC PROGRAM
WRIGLEY AREA

1972

by

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Project No. 7-6-4-72-6

Date: June 30, 1972

IMPERIAL OIL ENTERPRISES LTD.
Producing Department - Western Region

Reflection Seismic Program

Wrigley Area

Permits 6961, 6014, 6364, 6022 (Work Group 826)

Century Geophysical Corporation of Canada Party 33
from February 29th to April 1, 1972.

I.O.E. P.W.O. No: M 132363

Department Code No: 7-6-4-72-6

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Date: June 1972

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Introduction

This is a report on seismograph operations conducted by Century Geophysical Corp. of Canada, Party 33 on behalf of Imperial Oil Enterprises Ltd. in the Wrigley Area from February 29th to April 1, 1972.

The shooting was on permits 6961, 6014, 6364, and 6022 all of which are included in Work Group 826.

63° 00'

Wolf Cr
Iverson Range

Root

River

Twin Falls

Deerme Range

6961

English Chief

6014

6364

30'

6022

Iverson South

M-69

Pac. Caribon A-50

Monetoe Range

Nohanni River

North Nohanni

ACOUSTIC LBS.

Co

Comsat

WRIGLEY AREA

IMPERIAL OIL ENTERPRISES LTD.

SCALE 1:500,000

Statistical Data

Dates: The move into the Wrigley area was completed on February 29th, 1972. Line cutting and shot hole drilling commenced on the same day. Recording commenced on March 12th and was completed on March 28th 1972. The vehicles were released following clean up on April 1st 1972.

Production: 43.5 miles, 178 shot points, average daily production 2.6 miles, 17 working days. No down days.

Equipment: Recorder, shooting unit, cable unit, 2 survey units, party managers vehicle, 3 shot hole drills, 1 water truck, 5 bulldozers, 1 dozer shift truck. A chartered light aircraft and helecopter from Arctic Air Ltd. of Fort Simpson were used for supervisory trips and supplies. Fuel supplies were trucked from Fort Simpson.

Personnel: Party manager, operator and assistant, shooter and assistant, surveyor, 2 rodmens, 6 geophysical helpers, one mechanic, three camp staff, five drillers, five drill helpers, one drill supervisor, 10 dozer operators, one dozer foreman, one dozer camp cook.

Surveying: Horizontal angles were turned with a Wilde T-16 theodolite. Horizontal control was based on topography and aerial photography. Vertical datum used previous lines shot for Imperial Oil in the area and was checked by helecopter alimeter at two points.

Conditions: Weather was typically cold, with temperatures ranging from 0° to -50°F. Terrain was very rough in part, with some severe elevation changes, requiring vehicles to be towed up hills by bulldozers. The line along the Trench Creek was relatively smooth and flat.

Field Procedures

A 100% single fold method was used. Single holes were used, spaced 1320 feet apart, geophone stations were 110' apart with 10 geophones spread over 220'. The charge size varied from 20 lb to 100 lb of "Geogel". The average charge size was 50 pounds. The average hole depth was 80 feet. The drilling was fair to good, varying from soft wet sticky clay to extremely hard near surface beds.

Data Processing

All of the seismograms were corrected to a datum of +1000' A.S.L. using a datum velocity of 12,000'/sec. The data was played back digitally with sections produced on variable density film. All the data was filtered with selective filters used to remove low frequency interference energy. The data was not deconvolved because multiple interference was not a problem. Other data enhancement programs have been and are still being applied to obtain useable data. The processing is being done in Imperial Oil's Process Centre.

Results and Interpretation

The quality of the seismograms varied from fair to almost unuseable. Consistent reflections were obtained from the top of the Middle Devonian Carbonate and from the Proterozoic unconformity, but only in a few small

parts of the program. Because of this no maps have been produced to date. Data enhancement is continuing in an attempt to extend the areas of consistent reflections sufficiently to make an interpretation of the area.



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