

To Be Microfilmed

REPORT ON REPROCESSING OF SEISMIC DATA 1979

ESSO RESOURCES CANADA LIMITED
ALBERTA/B.C. EXPLORATION DISTRICT

NORMAN WELLS AREA - N.W.T.

019-06-05-056

T.J. HAWKINS

PROJECT NO: 19-06-05-79-01

ESSO RESOURCES CANADA LIMITED

WESTERN REGION - ALTA/B.C. DISTRICT

REPORT ON REPROCESSING OF SEISMIC DATA - 1979

NORMAN WELLS AREA - N.W.T.

019-06-05-056

DATA PROCESSING DONE BY ESSO RESOURCES CANADA LTD.

for Western Decatia

EXPLORATORY PERMITS

Permit 5808 and Leases 3228, 3230, 3237, 3247, 3251, 6395

By

T.J. Hawkings

March, 1982

Project No. 19-06-05-79-01



0236F

PROJECT NUMBER: 19-06-05-79-01
19-06-05-56

COMPANY: ~~Canadian Resources~~ Western Decalta

REPORT TITLE: Norman Wells Seismic, 1979

COMMENTS:

ENGINEERING AND CONTROL BRANCH

ENVIRONMENTAL AND PROTECTION BRANCH

RESOURCE EVALUATION BRANCH

OK. Blm

See 1981 Report 7-6-5-377 for composite
SP maps

CANADA BENEFITS BRANCH

ACTION SLIP

FINAL REPORTS

Project No 19-06-05-79-01

or 19-06-05-56

The following action has been taken:

Receipt acknowledged

Branch Card made

Reports and maps date-stamped.....

Reports and maps labelled.....

Date rec'd entered in project ledger.....

Memo sent to Land Management.....

Reports for review list edited.....

Inventory sheet made

REVIEW and APPROVAL made by:

Eng. and Control

Resource Eval. W.M. J.F. 24/82.....

Land Management

PLEASE STATE COMMENTS ON ATTACHED SHEET.

MAPS AND SECTIONS

Maps One copy of the following maps is included with this report:

<u>Map</u>	<u>Scale</u>	<u>Area</u>
Shotpoint map	1:100,000	Norman Wells, N.W.T.
Isochron - Kee Scarp to Hume	1: 62,500	Norman Wells, N.W.T.

Sections One copy of the final stacked sections after reprocessing is also included with the report. These seismic sections are shown on the shotpoint map. The sections submitted are:

78-I24-42038
78-I24-42039
78-I24-42040
78-I24-42041
78-I24-42042
78-I24-42043
78-I24-42044
78-I24-42091

INTRODUCTION

This report covers reprocessing of eight seismic lines which were shot in the Norman Wells area.

The purpose of this project was to obtain higher quality seismic data to aid in the delineation of the Norman Wells reef.

EXPLORATORY PERMITS

Permit 5808

Leases to be grouped: 3228, 3230, 3237, 3247, 3251, 6395

EXPLORATORY LAND OFF PERMITS

Grids:

63°20'N 124°00'W

63°30'N 123°30'W

63°30'N 124°00'W

63°30'N 124°15'W

65°20'N 127°00'W

65°20'N 127°15'W

65°20'N 126°45'W

DATA REPROCESSING

The nine seismic lines, processed originally by Geophysical Service Inc. in Calgary, Alberta, were reprocessed by Esso Resources Canada. The following steps were used in the reprocessing of these lines:

1. Demultiplex of field tape
2. Edit and Gain Recovery
3. Band Pass Filter to improve S/N
4. Surface Consistent Statics for shot period LVL Correction
5. Normal Moveout Corrections determined from well control and long spread single fold
6. Elevation and Datum Statics
7. Trim Statics in CDP Gather
8. Front End Mute
9. Stack of Common Depth Points (600% and some lines 1200%)
10. Deconvolution to improve band width
11. Band Pass Filter
12. Gain Sclaining for Display

RESULTS AND INTERPRETATION

The Norman Wells reef, a large biohermal buildup of Kee Scarp age, covers an area of approximately 6 x 25 km.

Because of its large areal size, many miles of good quality seismic coverage are required to fully delineate the reef.

To-date, the interpretation of the reef outline has been based on trade data of various vintage and of varying quality.

This reprocessing project was an attempt to further delineate the areal extent of the reef and particularly its updip edge by upgraded quality seismic coverage.

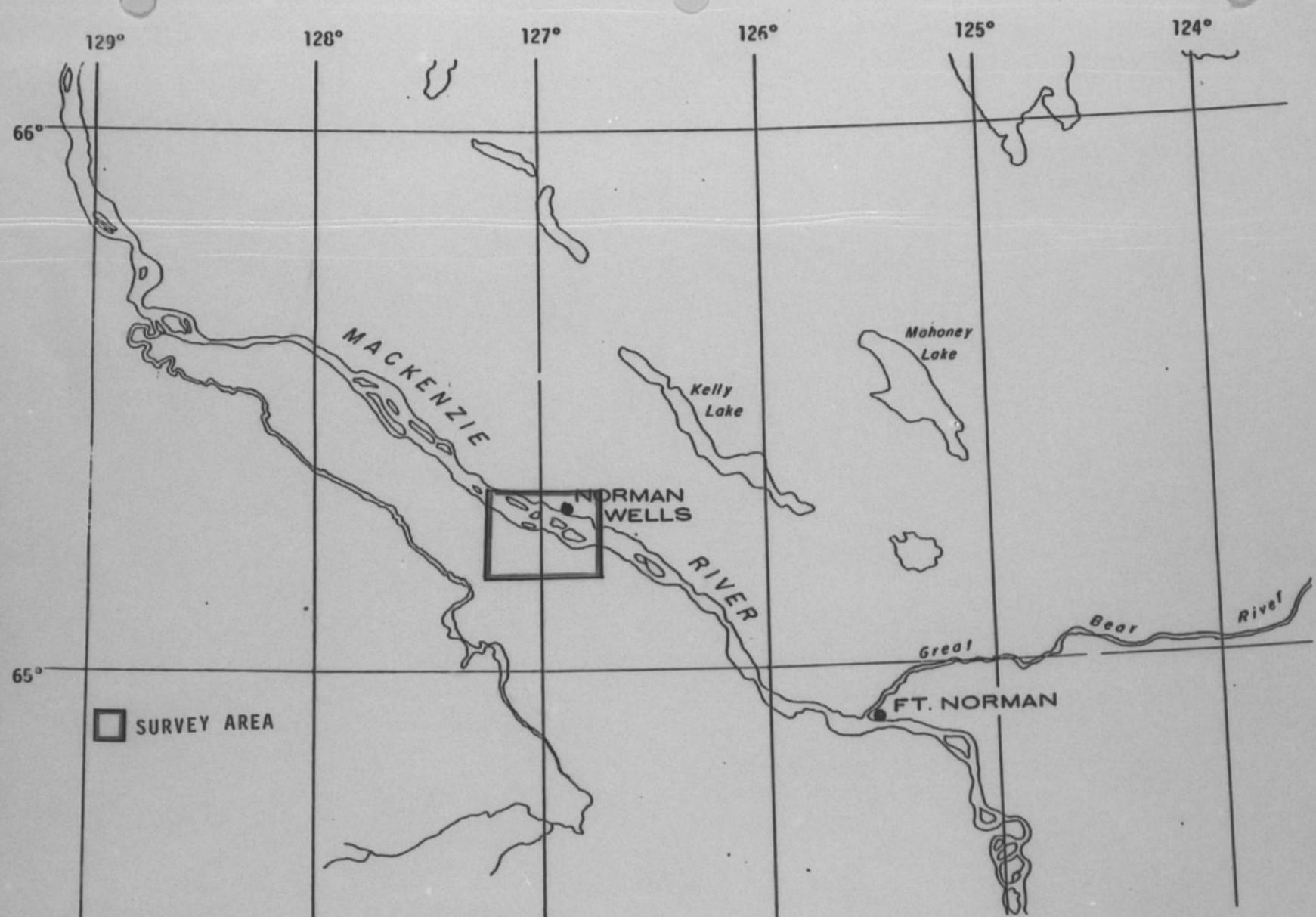
The project was successful in that it refined our understanding of the updip edge of the reef as well as provided new data points on the Kee Scarp-Hume Isochron map, the main tool for Kee Scarp delineation in the area.

SUMMARY AND CONCLUSIONS

Eight seismic lines, reprocessed by Esso Resources in their Geophysical Data Processing Centre in Calgary Alberta, greatly contributed to the understanding of the areal extent of the Norcen Wells reef.

They provided valuable information for the delineation of the updip edge of the bioherm as well as new and better data points in the reef interior.

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PROJECT NO. 19-06-05-79-01
REPROCESSING OF SEISMIC DATA

NORMAN WELLS