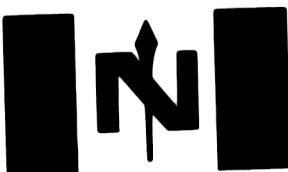


9229-N10-7E,12E

9229 - N10 - 7E

9229 - N10 - 12E

Alt 26 1985



NORTHCOR ENERGY LTD.

9 2 2 9 - N 1 0 - 7 E

9 2 2 9 - N 1 0 - 1 2 E

Geophysical Report

9 2 2 9 - N 1 0 - 7 E
CAMERON HILLS N.W.T.

E.A. No. 171

9 2 2 9 - N 1 0 - 1 2 E



CAMERON HILLS, N.W.T.

Lat: 60 deg. 00 min. to 60 deg. 30 min. N
Long: 117 deg. 45 min. to 118 deg. 30 min. W

Program Numbers	9229-N10-7E, 9229-N10-12E
Operator's Report Name	Northcor Cameron Hills Seismic Program 1984
Type of Survey	Reflection Seismic
Survey Locality	Northwest Territories
Year of Field Work	1984
Operator	Northcor Energy Ltd., Calgary, Alberta
Prime Contractor	Sefel Geophysical Ltd., Calgary, Alberta
Exploration Agreement	E.A. No. 171
Author of Report	Empress Exploration Consultants Calgary, Alberta
Date of Report	January, 1985
Commencement of Survey	January 23, 1984
Completion of Survey	March 21, 1984
Additional 1985 Survey - (9229-N10-12E)	commenced January 7, 1985 completed January 21, 1985

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Instrumentation and Field Parameters.....	5
Description of Data Processing.....	6
Synthetic Seismogram.....	11
Discussion.....	12
Comments and Conclusions.....	14

ENCLOSURES

1. Seismic Shot Point Map
2. Seismic Sections: one pre-fold paper copy and
one film copy for Lines NCH 1-6,
6A,7,7A,8-23,23A,24,25,25A,26-31
3. Interpretive Maps: one pre-fold paper print of each:

Muskeg Distribution Map

Time Structural Maps:

- Near Top Devonian (Wabamun)
- Top Slave Point
- Keg River Group
- Basal Beds

Isochronal Maps:

- Near Top Devonian (Wabamun) to Top Slave Point
- Top Slave Point to Basal Beds
- Keg River Group to Basal Beds

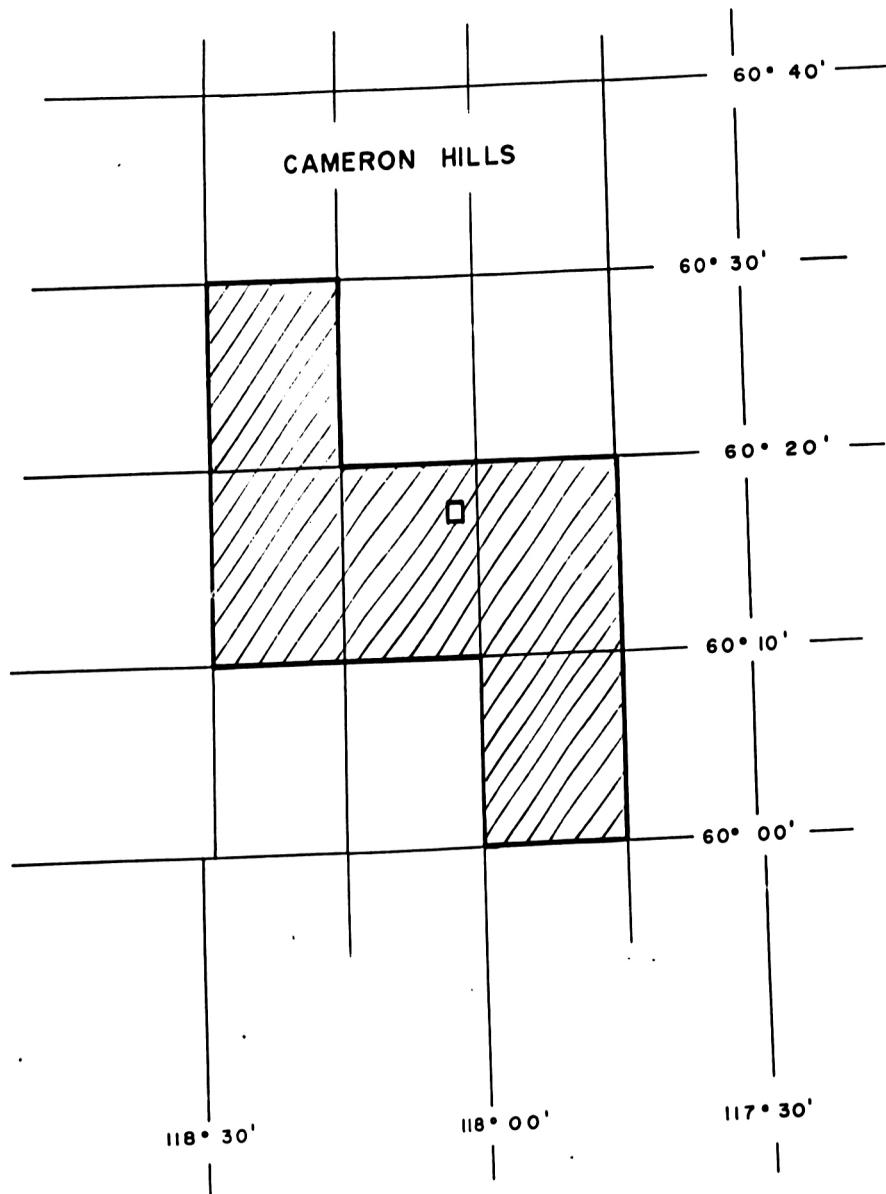
INTRODUCTION

The Prospect lies immediately north of the southern boundary of the Northwest Territories, some 145 km. southwest of Hay River, N.W.T.

The survey was undertaken to evaluate the geological section of the Area, primarily the Slave Point configuration and the Slave Point to Basement interval.

Party 521 of Sefel Geophysical Ltd., under the direction of Empress Exploration Consultants, Calgary, Alberta, began operations January 10, 1984. A total of approximately seventy-two (forty-nine recording) days were worked during which time five hundred and twenty-three point three kilometers of twelve hundred percent CDP continuous sub-surface coverage were surveyed. This field work was completed March 21, 1984. An additional fifteen kilometers (Lines NCH-30, NCH-31) of detail seismic were surveyed between January 7 and January 21, 1985, - the delay necessitated by soft surface conditions. This portion of the survey is under Program Number 9229-N10-12E. All of the data were processed by Sefel Geophysical Ltd., Calgary, Alberta.

Reflection quality remained good. The character, amplitude, and definition of Slave Point and shallower events are correlative - although a possible Devonian Twin Falls reflector becomes a characteristic boundary transgressing geological time. The Lower Keg River Basal beds, and Basement events are difficult to follow.



STATISTICAL SUMMARY

Tractors arrived at the program site January 10, 1984, drilling began January 31, 1984 and recording commenced February 2, 1984. This initial survey was completed March 21, 1984 - a total of seventy-two days being worked of which forty-nine were recording days. The detail survey, Lines NCH-30 and NCH-31, were surveyed between January 7 and January 21, 1985 - the delay necessary to await the freezing of dozed lines.

Forty-three Canadian personnel - the total field complement - were employed on the program.

Basic Crew

- 1 - Party Manager
- 1 - Clerk
- 1 - Mechanic
- 3 - Camp Staff (Cook, Helper and Camp Attendant)
- 4 - Survey Crew
- 1 - Observer
- 1 - Junior Observer
- 1 - Shooter
- 1 - Shooter's Helper
- 4 - Line Truck Drivers
- 8 - Recording Helpers
- 4 - Drillers
- 4 - Drill Helpers
- 2 - Water Truck Drivers
- 4 - Cat Skinnérs
- 1 - Tractor Operator
- 1 - Cat Foreman
- 1 - Cat Supervisor

Five hundred and twenty-three point three two five kilometers of seismic coverage were obtained, initially, the daily production averaging ten point seven kilometers. An additional fifteen point one kilometers of detail survey were surveyed in January, 1985.

The muskeg-covered terrain is rough and hilly requiring frequent detours and tow-cats on the southeastern part of the program. Many delays were experienced due to cat equipment failure.

During the initial program, sufficient ice accumulated of the lakes and rivers to allow safe travel for equipment and air-servicing.

The weather remained reasonably cold, winds relatively light, and snowfall average. Hence, no weather-related delays were experienced.

f. DESCRIPTION OF DATA ACQUISITION EQUIPMENT AND FIELD PROCEDURES

(see also the attached section label)

energy/source array: 2 kg dynamite charge in a single hole 12 m deep, holes spaced:

- (a) 100 m apart in-line with spread
- (b) 80 m apart in-line with spread

detector type/array: 10 Hz Mark L-15 geophones using an in-line pattern grouping 9 geophones at:

- (a) 2.2 m intervals in a symmetrical split spread 1200m-25m x 25m-1200m with groups 25m apart
- (b) 3.0 m intervals in a symmetrical split spread 960m-20m x 20m-960m with groups 20m apart

Note: (a) refers to Lines 6 to 31
(southeastern & central)

(b) refers to lines 1 to 5
(northwestern)

recording system: 96 channel Sercel 338B recording instrument employing the SEGB format recording 3 seconds of data at 2 ms sampling interval.
The recording filter was 8/12 - 125/24 Hz

9. DESCRIPTION OF DATA PROCESSING

(see also the attached section label)

1. Seismic Reflection

- Demultiplex with gain removal, 2 ms sample rate
- geometry
- gain application
- instrument and geophone phase compensation
- low cut filter - 8/16 Hz
- spiking deconvolution; 60 ms operator, 1% pre-whitening, window 100 - 1950 ms
- weathering statics; datum 750 m above sea level
weathering velocity of 610 m/sec
- trace equilization
- automatic residual statics,
(350 - 1000 ms window, + - 40 ms lag)
- velocity analysis
- normal moveout and edit
- automatic residual statics -
(350 - 1000 ms window, + - 20 ms lag)
- common offset stack
- residual NMO
- mute
- stack - 1200 %
- bandpass filter - 8/16 - 75/95 Hz
- trace equilization; (300 - 1500 ms window)
- time domain wave equation migration

FIELD RECORDING -(a)

DATE SHOT	MARCH. 1984
SHOT BY	SEFEL GEOPHYSICAL LTD.
SOURCE TYPE	PARTY NO. 521
SOURCE PATTERN	DYNAMITE
CHARGE	SINGLE HOLE
GEOPHONE TYPE	2 KG AT 12 M
GEOPHONE PATTERN	MARK L-15 10 HZ
DATA CHANNELS	9 AT 2.2 M INTERVALS
GROUP INTERVAL	96
SHOT POINT INTERVAL	25 M
SPREAD GEOMETRY	100M
INSTRUMENT TYPE	1200-25-X-25-1200 M
TAPE FORMAT	SERCEL 338B
FIELD FILTER	SEGB
NOTCH	8/12 - 125/24 HZ/DB
SAMPLE INTERVAL	OUT
RECORD LENGTH	2 MS
	3 SEC

DIGITAL PROCESSING

1 DEMULTIPLEX WITH GAIN REMOVAL	
PROCESSING SAMPLE RATE	2 MS
2 GEOMETRY	
3 AUTOMATIC GAIN CURVE APPLICATION	
4 INSTRUMENT PHASE COMPENSATION	
5 GEOPHONE PHASE COMPENSATION	
6 LOW CUT FILTER	8/16 HZ
7 SPIKING DECONVOLUTION	
OPERATOR LENGTH	60 MS
OPERATOR DESIGN WINDOW	
MIN OFFSET	100-1500 MS
MAX OFFSET	750-2150 MS
PREWHITENING	1 PERCENT
8 WEATHERING CORRECTIONS	
DATUM ELEVATION	750 M ASL
DATUM VELOCITY	2600 M/SEC
WEATHERING VELOCITY	610 M/SEC
9 EQUALIZATION	
10 AUTOMATIC RESIDUAL STATIC	
WINDOW	350-1000 MS
MAX CORRELATION LAG	+40 MS
11 VELOCITY ANALYSIS	
12 NORMAL MOVEOUT	
13 AUTOMATIC RESIDUAL STATIC	
WINDOW	350-1200 MS
MAX CORRELATION LAG	+20 MS
14 COMMON OFFSET STACK	
15 RESIDUAL NMO	
16 MUTE	1200 PERCENT
17 STACK	8/16-75/95 HZ
18 BANDPASS FILTER	
19 EQUALIZATION	
WINDOW	300-1500 MS
20 FILM DISPLAY	16 TR/IN
	7.5 IN/SEC

POLARITY (X) POSITIVE () NEGATIVE

FIELD RECORDING - (b)

DATE SHOT	FEBRUARY, 1984
SHOT BY	SEFEL GEOPHYSICAL LTD.
PARTY NO.	521
SOURCE TYPE	DYNAMITE
SOURCE PATTERN	SINGLE HOLE
CHARGE	2 KG AT 12 M
GEOPHONE TYPE	MARK L-15 10 HZ
GEOPHONE PATTERN	9 AT 3.0 M INTERVALS
DATA CHANNELS	96
GROUP INTERVAL	20 M
SHOT POINT INTERVAL	80 M
SPREAD GEOMETRY	960-20-X-20-960 M
INSTRUMENT TYPE	SERCEL 338B
TAPE FORMAT	SEGB
FIELD FILTER	8/12 - 125/24 HZ/DB
NOTCH	OUT
SAMPLE INTERVAL	2 MS
RECORD LENGTH	3 SEC

DIGITAL PROCESSING

1 DEMULTIPLEX WITH GAIN REMOVAL	PROCESSING SAMPLE RATE	2 MS
2 GEOMETRY		
3 AUTOMATIC GAIN CURVE APPLICATION		
4 INSTRUMENT PHASE COMPENSATION		
5 GEOPHONE PHASE COMPENSATION		
6 LOW CUT FILTER		8/16 HZ
7 SPIKING DECONVOLUTION		
OPERATOR LENGTH		60 MS
OPERATOR DESIGN WINDOW		
MIN OFFSET		100-1500 MS
MAX OFFSET		550-1950 MS
PREWHITENING		1 PERCENT
8 WEATHERING CORRECTIONS		
DATUM ELEVATION		750 M ASL
DATUM VELOCITY		2600 M/SEC
WEATHERING VELOCITY		610 M/SEC
9 EQUALIZATION		
10 AUTOMATIC RESIDUAL STATIC	WINDOW	350-1000 MS
	MAX CORRELATION LAG	+-40 MS
11 VELOCITY ANALYSIS		
12 NORMAL MOVEOUT		
13 AUTOMATIC RESIDUAL STATIC	WINDOW	350-1100 MS
	MAX CORRELATION LAG	+-20 MS
14 COMMON OFFSET STACK		
15 RESIDUAL NMO		
16 MUTE		1200 PERCENT
17 STACK		8/16-75/95 HZ
18 BANDPASS FILTER		
19 EQUALIZATION	WINDOW	300-1500 MS
20 TIME DOMAIN WAVE EQUATION MIGRATION		16 TR/IN
21 FILM DISPLAY		7.5 IN/SEC

POLARITY () POSITIVE (X) NEGATIVE

2. Gravity not applicable

3. Magnetic not applicable

h. SEISMIC SHOT POINT MAP - enclosed

i. PROCESSED SECTIONS

one paper prefold copy and one film copy
of sections for Lines:

NCH-1	NCH-8	NCH-17	NCH-25
NCH-2	NCH-9	NCH-18	NCH-25A
NCH-3	NCH-10	NCH-19	NCH-26
NCH-4	NCH-11	NCH-20	NCH-27
NCH-5	NCH-12	NCH-21	NCH-28
NCH-6	NCH-13	NCH-22	NCH-29
NCH-6A	NCH-14	NCH-23	NCH-30
NCH-7	NCH-15	NCH-23A	NCH-31
NCH-7A	NCH-16	NCH-24	

j. BATHYMETRY not applicable

k. INTERPRETIVE MAPS

Muskeg Distribution Map

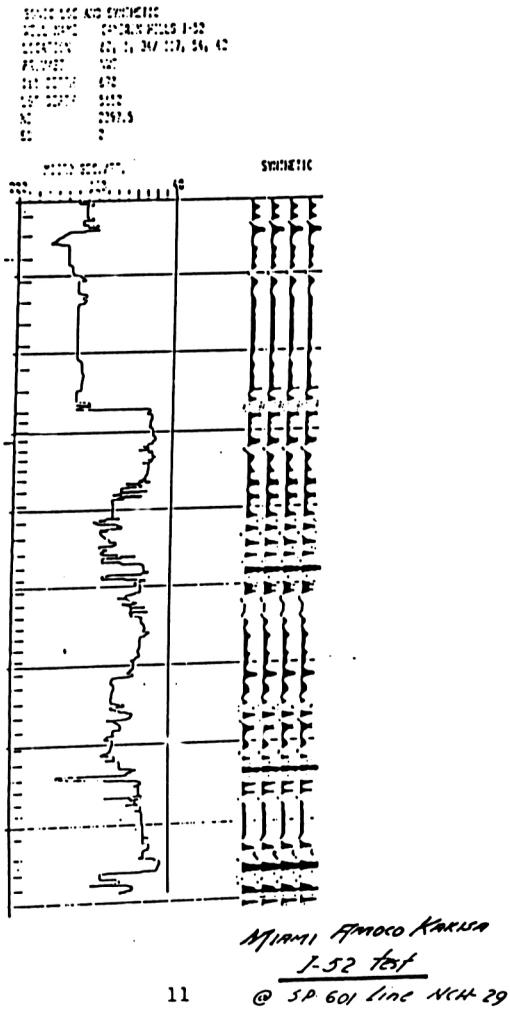
- time structural maps:
 - Top Devonian (Wabamun)
 - Top Slave Point
 - Keg River
 - Basal Beds

isochronal maps:

- Top Devonian (Wabamun) to Slave Point
- Keg River to Basal Beds
- Slave Point to Basal Beds

1. RELATED INTERPRETIVE INFORMATION:

A synthetic seismogram for the Miami Amoco Kakisa I-52 well (Lat: 60 degrees 01 minute 34 seconds N, Long: 117 degrees 54 minutes 42 seconds W) was prepared and is presented below.



DISCUSSION OF STUDY

The data for the Top of Slave Point presentation are from migrated sections - the other horizon data are derived from non-migrated sections. This was due to the early call for results while the migrated data were unavailable.

The Muskeg Distribution Map has been manufactured by studying the Slave Point to Basement interval responses at various well-sites in the Area. (see Muskeg Distribution Map) Employing the noted characteristics as models, each of the seismic lines were examined.

The Keg River Map is based solely upon the observations of amplitude of energy response - deliberately no attempt at continuity was made. Therefore this map, and related presentations, are considered very general - and, at times, may be quite inaccurate.

The "Basement" in this Prospect is comprised of sedimentary clastics - hence the seismic response strength varies.

Prominent narrow structural highs trending north-easterly, oftentimes associated with parallel faulting, are shown in the northern and western parts of the Prospect beyond the main Muskeg deposition. The Pacific Amoco Tathlina N-18 gas well lies within this area.

Within the Muskeg depositional area, several Slave Point and pre-Slave Point structural anomalies are indicated. That feature immediately south of the Shell Kakisa River #1 (H-57) well (Lat: 60 degrees 06 minutes 22 seconds N, Long: 117 degrees 64 minutes 49 seconds W) has

been confirmed by detail Lines NCH-30 and NCH-31, shot in January 1985.

The Slave Point and deeper anomalies, which could be reefal, are:

- a) Line NCH-4 Shot Points 1010 to 1077
 Shot Points 1213 to 1265
- b) Line NCH-5 Shot Points 813 to 881
- c) Line NCH-7 Shot Points 729 to 793
- d) Line NCH-8 Shot Points 1141 to 1217
- e) Line NCH-13 Shot Points 425 to 501
- f) Line NCH-14 Shot Points 501 to 541
- g) Line NCH-18 Shot Points 173 to 217
- h) Line NCH-19 Shot Points 365 to 421
- i) Line NCH-25A Shot Points 357 to 457
- j) Line NCH-29 Shot Points 233 to 289
- k) Line NCH-30 Shot Points 261 to 319 (see Line NCH-14)
- l) Line NCH-31 Shot Points 261 to 297 (see Line NCH-14)

COMMENTS AND CONCLUSIONS

The Slave Point configuration has been delineated to the extent of the seismic control.

Several of the mapped features north of the Muskeg edge appear more attractive than that associated with the N-18 successful test - although a seismic line directly over this well is not available. Detail seismic over these anomalies is required.

Within the Muskeg depositional area, the indicated Slave Point and pre-Slave Point structural anomalies are most interesting. The Pan Am Andex Cameron (C-22) test (Lat: 60 degrees 20 minutes 00 seconds N, Long: 117 degrees 45 minutes 00 seconds W,) recovered in excess of two hundred meters of light oil from the Sulphur Point.

That feature to the immediate south of the Shell Kakisa River #1 (H-57) well (Lat: 60 degrees 06 minutes 22 seconds N, Long: 117 degrees 64 minutes 49 seconds W) has been supported by detail Lines NCH-30 and NCH-31 shot in January 1985. The data indicates that the H-57 well was not optimumly located and that the Sulphur Point and deeper horizons, between Shot Points 277 and 293, Line NCH-30, could be expected to be at least forty meters structurally higher. The configuration of this anomaly suggests that denser seismic control would reveal additional narrow features which, with the present control, are but mildly indicated.

It is recommended that a Basement test be conducted in the vicinity of S.P. 285 Line NCH-30, and that those anomalies beyond the Muskeg depositional area be studied further.

2/15/85

N.E. Klinck, P. Eng.
Empress Exploration Consultants