OCELOT ENERGY

92270221 DA

SEISMIC REPROCESSING REPORT

EL 365, NEAR FORT LIARD, N.W.T.

***SEISMIC PROCESSING CONTRACTOR*: GECO-PRAKLA, CALGARY**

***DATE OF WORK*: JUNE, 1995**

***REPORT AUTHOR*: RITA H. POLT**

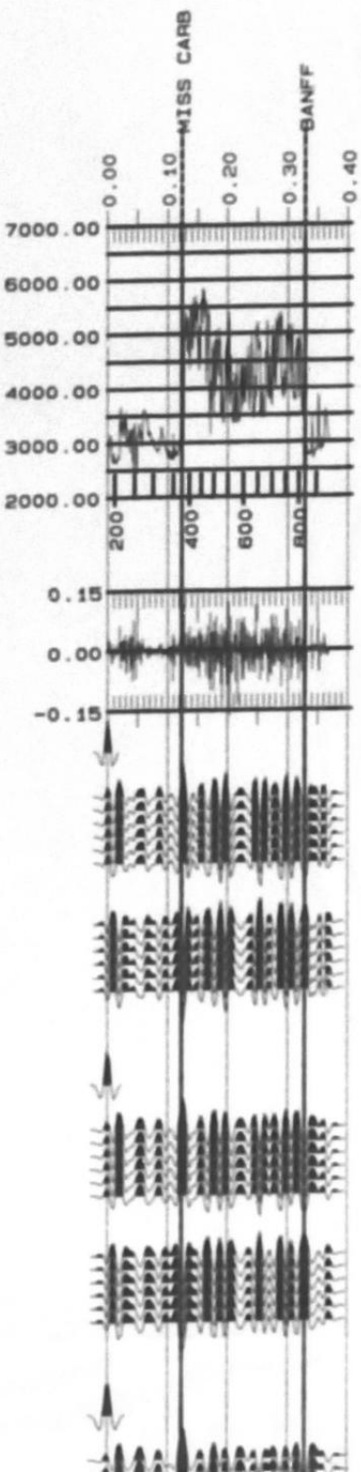
***DATE*: MAY 1996**

9227-022-1DA

N.W.T. /FT LIARD /MOD LOG AMOCO B 1 EAST FLETT H 13
OCELOT ENERGY INC.
Thu May 16 14:32:38 1996

GMA LOGM
KB ELEVATION=308.5 M

TIME DATUM	=125.6 M
SAMPLE INTERVAL	=0.5 MS
AMPLITUDE	=1.0
# OF TRACES	=6
CHECK SHOT APPLIED	=N
TRAVEL TIME CURVE	=SONIC
MULTIPLES	=NONE
WAVELET # 1 RICKER :	
PERIOD	=18.0 MS
FREQUENCY	=43.3 Hz
PHASE	=0 deg
WAVELET # 3 RICKER :	
PERIOD	=26.0 MS
FREQUENCY	=30.0 Hz
PHASE	=0 deg
LOGS USED IN RC CALC.	=SONIC ONLY
AGC LENGTH	=0.0 MS
TRACES PER INCH	=12.0
INCHES PER SEC	=3.75
WAVELET # 2 RICKER :	
PERIOD	=22.0 MS
FREQUENCY	=35.5 Hz
PHASE	=0 deg



VELOCITY LOG

DEPTH (KB)

REFLECTION COEFFICIENTS

NORMAL RICKER 0 deg
43.3 Hz 18.0 ms

NORMAL

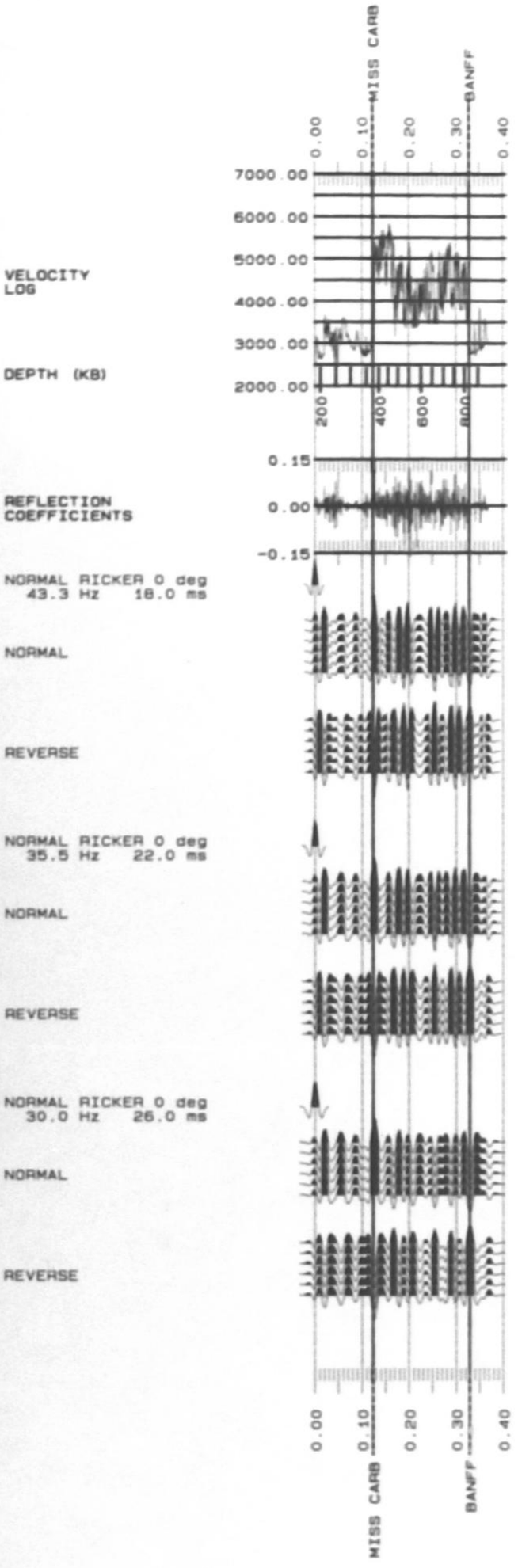
REVERSE

NORMAL RICKER 0 deg
35.5 Hz 22.0 ms

NORMAL

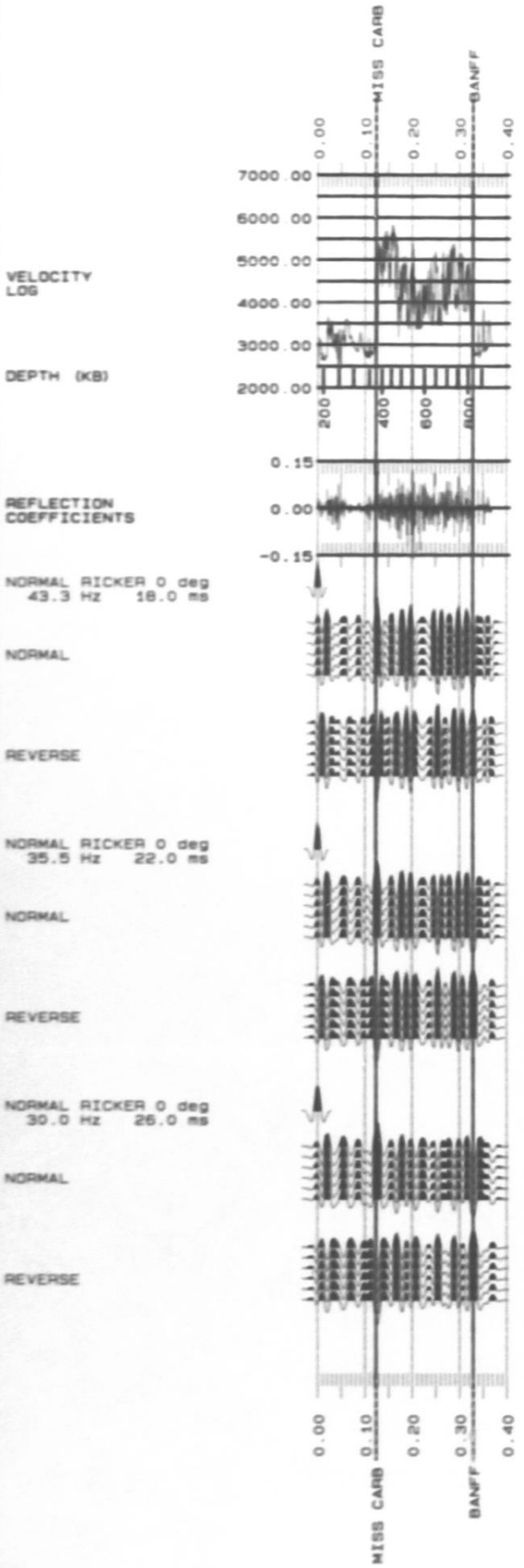
REVERSE

NORMAL RICKER 0 deg
30.0 Hz 26.0 ms



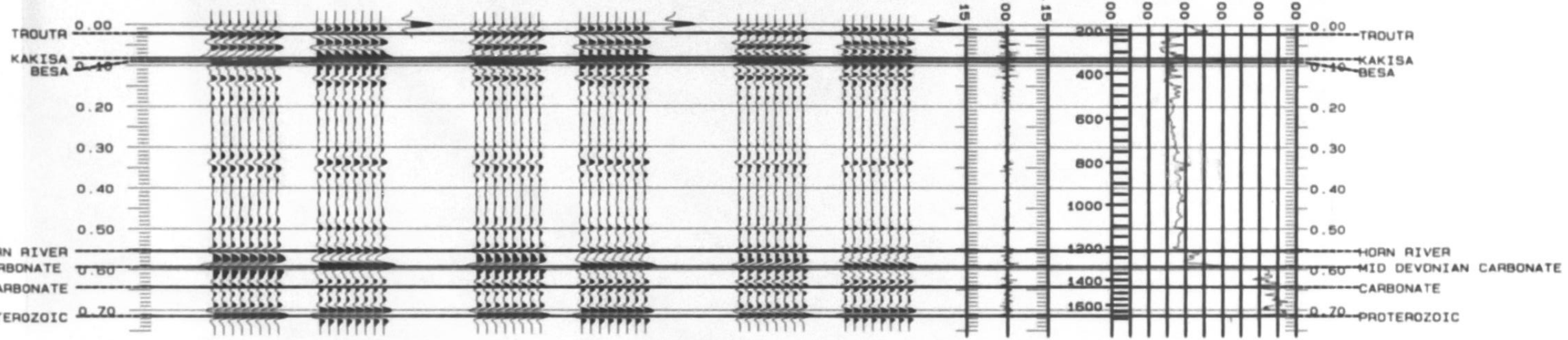
AMOCO B 1 EAST FLETT H 13

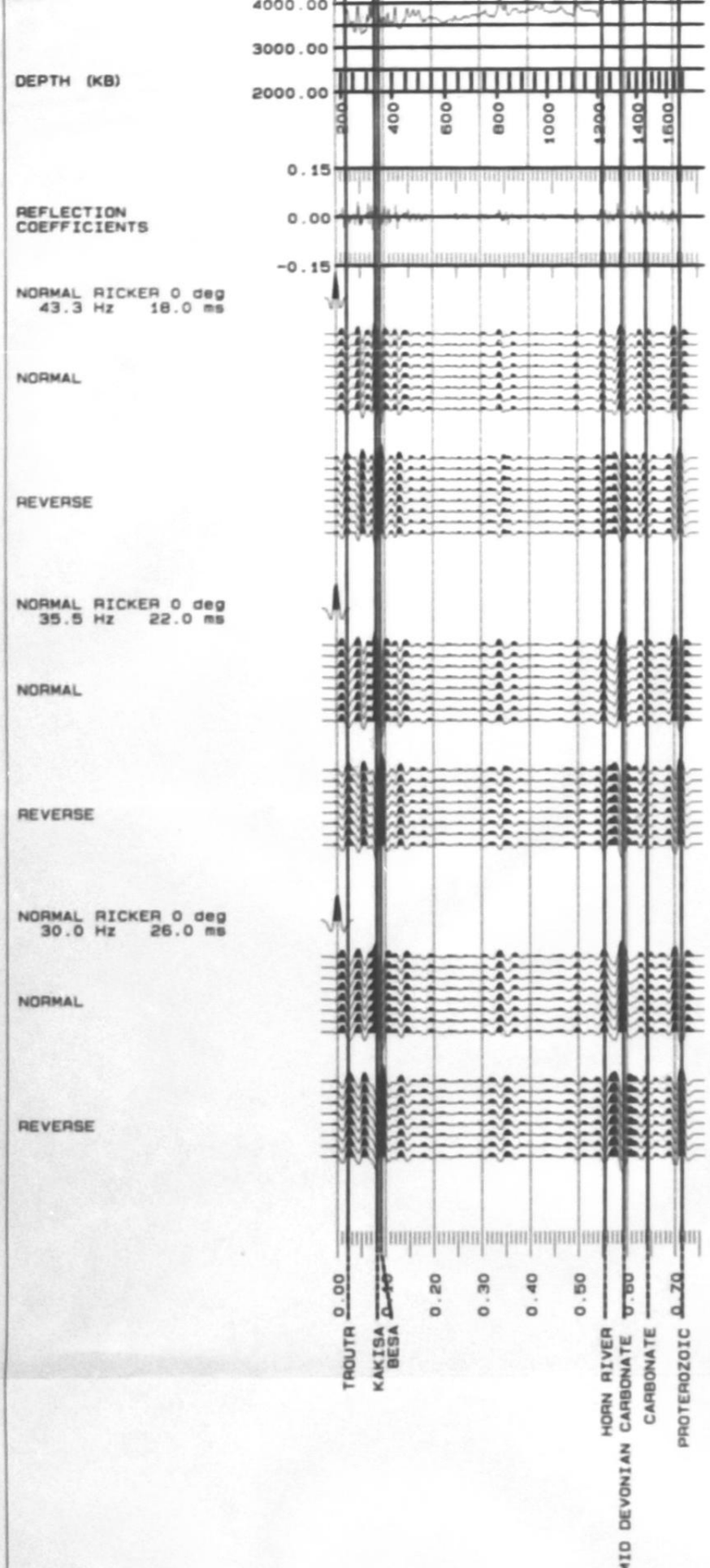
FORMATION	DEPTH m (KB)	DEPTH m (ASL)	TIME Seconds	AVG VEL m/s	RMS VEL m/s	INT VEL m/s	INT TIME Seconds	INT DEN kg/mmm
MISS CARB	369.7	-61.2	0.124	3010	3023	4415	0.205	0.0
BANFF	822.6	-514.1	0.329	3885	3993			



AMOCO B 1 EAST FLETT H 13

FORMATION	DEPTH m (KB)	DEPTH m (ASL)	TIME Seconds	AVG VEL m/s	RMS VEL m/s	INT VEL m/s	INT TIME Seconds	INT DEN kg/mm
MISS CARB	369.7	-61.2	0.124	3010	3023			
						4415	0.205	0.0
BANFF	822.6	-514.1	0.329	3885	3993			

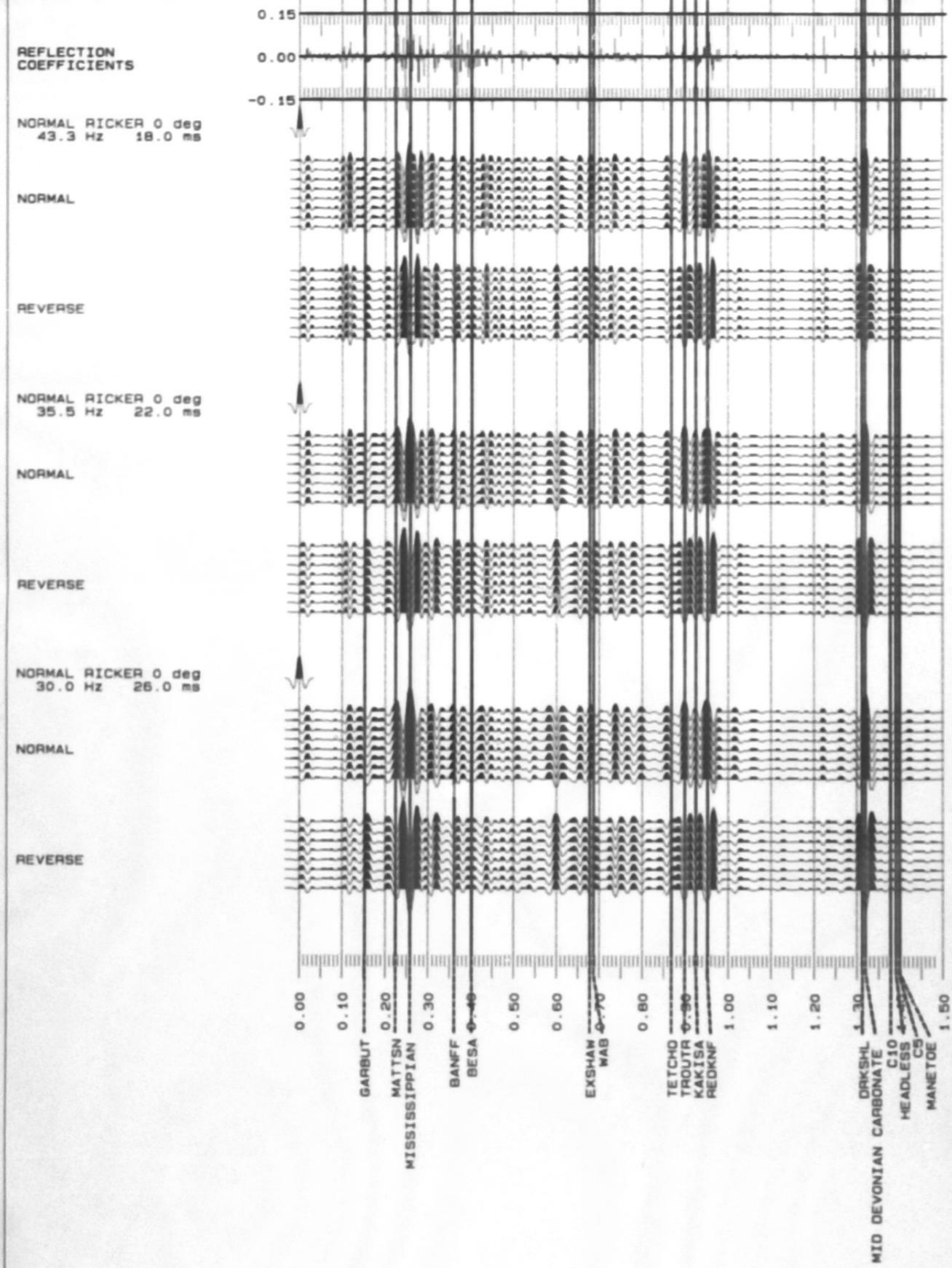

WAVELET # 3 RICKER :
PERIOD -26.0 MS
FREQUENCY -30.0 Hz
PHASE -0 deg
REVERSE
NORMAL
NORMAL RICKER 0 deg 30.0 Hz 26.0 ms
REVERSE
NORMAL
NORMAL RICKER 0 deg 35.5 Hz 22.0 ms
REVERSE
NORMAL
NORMAL RICKER 0 deg 43.3 Hz 18.0 ms
REFLECTION COEFFICIENTS
-0.15
0.00
0.15
DEPTH (KB)
VELOCITY LOG
2000.00
3000.00
4000.00
5000.00
6000.00
7000.00
TROUTR
KAKISA BESA
HORN RIVER
MID DEVONIAN CARBONATE
CARBONATE
PROTEROZOIC
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
200
400
600
800
1000
1200
1400
1600



MURPHY ET AL NETLA M 31

FORMATION	DEPTH m (KB)	DEPTH m (ASL)	TIME Seconds	AVG VEL m/s	RMS VEL m/s	INT VEL m/s	INT TIME Seconds	INT DEN kg/mmm
LCRET	24.4	192.9						
MAB	125.0	92.3						
TETCHO	148.4	68.9						
TROUTR	222.5	-5.2	0.023	4271	4281			
KAKISA	331.6	-114.3	0.083	3791	3816	3612	0.060	0.0
BESA	350.5	-133.2	0.091	3871	3905	4694	0.008	0.0
HORN RIVER	1217.7	-1000.4	0.555	3760	3768	3738	0.464	0.0
MID DEVONIAN CARBONATE	1299.7	-1082.4	0.593	3793	3804	4268	0.038	0.0
CARBONATE	1456.0	-1238.7	0.644	3982	4045	6212	0.050	0.0
PROTEROZOIC	1682.8	-1465.5	0.715	4221	4336	6388	0.071	0.0

REVERSE
NORMAL
NORMAL RICKER 0 deg
30.0 Hz 26.0 ms
REVERSE
NORMAL
NORMAL RICKER 0 deg
35.5 Hz 22.0 ms
REVERSE
NORMAL
NORMAL RICKER 0 deg
43.3 Hz 18.0 ms
REFLECTION COEFFICIENTS
-0.15
0.00
0.15
DEPTH (KB)
VELOCITY LOG
2000.00
3000.00
4000.00
5000.00
6000.00
7000.00
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
0.00
0.10
GARBUT
0.20
MATTSN
MISSISSIPPIAN
0.30
BANFF
BESA
0.40
0.50
0.60
EXSHAW
WAB
0.70
0.80
TETCHO
TROUTR
KAKISA
REDKNF
0.90
1.00
1.10
1.20
1.30
DRKSHL
MID DEVONIAN CARBONATE
C10
HEADLESS
C5
MANETOE
1.40
1.50
PHASE
-0 deg



BA TEXACO ARROWHEAD N-2

FORMATION	DEPTH m (KB)	DEPTH m (ASL)	TIME Seconds	AVG VEL m/s	RMS VEL m/s	INT VEL m/s	INT TIME Seconds	INT DEN kg/mmm
PLEIS	4.6	446.5						
FSJOHN	16.8	434.3						
GARBUT	531.9	-80.8	0.153	3127	3135			
MATTSN	633.7	-182.6	0.225	3028	3038	2819	0.072	0.0
MISSISSIPPIAN	685.8	-234.7	0.259	3041	3056	3128	0.033	0.0
BANFF	875.4	-424.3	0.362	3221	3268	3673	0.103	0.0
BESA	946.7	-495.6	0.402	3250	3299	3511	0.041	0.0
EXSHAW	1400.9	-949.8	0.678	3267	3299	3291	0.276	0.0
WAB	1416.7	-965.6	0.687	3272	3305	3678	0.009	0.0
TETCHO	1752.6	-1301.5	0.868	3363	3394	3707	0.181	0.0
TROUTR	1810.5	-1359.4	0.900	3373	3403	3635	0.032	0.0
KAKISA	1864.8	-1413.7	0.926	3396	3429	4222	0.026	0.0
REDKNF	1919.9	-1468.8	0.953	3415	3450	4067	0.027	0.0
DRKSHL	2602.4	-2151.3	1.313	3517	3549	3787	0.360	0.0
MID DEVONIAN CARBONATE	2617.9	-2166.8	1.321	3521	3553	4263	0.007	0.0
C10	2795.6	-2344.5	1.379	3630	3697	6102	0.058	0.0
HEADLESS	2833.1	-2382.0	1.391	3652	3724	6020	0.012	0.0
C5	2853.5	-2402.4	1.398	3664	3740	6187	0.007	0.0
MANETOE	2859.0	-2407.9	1.400	3667	3744	6024	0.002	0.0

List of Enclosures:

Figure 1: Shot point map showing reprocessed lines in green.

Figure 2: Middle Devonian Time Structure Map

Enclosures: For each of lines CCQ-1, CCQ-4, CCQ-5, CCQ-6 and CCQ-7:

- 1 mylar copy Migration normal and reverse
- 2 blackline copies Migration normal and reverse

NOTE: Processing was done by Geco-Prakla with only normal polarity films delivered. To satisfy NEB requirements, we subsequently had the reverse polarity filmed by Exssel since Geco-Prakla have quit the seismic processing business in the meantime.

We are submitting entire lines even though only the portion on or within 3 km of EL 365 is required.

- 3 synthetics: East Flett H13, Netla M-31, Arrowhead N-02

Seismic Processing Methodology:

This 1969 Amoco data set was reprocessed using typical modern plains parameters with the addition of pre-stack dip move-out (DMO). The result is a dramatic improvement in the data. Each seismic line has a label with complete processing information; fold, elevation and statics are presented in graphical format above the seismic and velocity information is tabulated above the applicable CDP.

Processing Parameters used:

1. SEG-Y Reformat
2. True Amplitude Recovery
3. Deconvolution - Predictive
   - Operator length: 100 ms
   - Lag Length: 12 ms
   - Prewhitening: 1.0%
   - Design window: 500-300 ms @ offset 62 m
     1000-3500 ms @ offset 2200 m
4. Trace Equalization - Time Window 2000 ms
5. Statics - Elevation
   - Structural Datum: 500 meters ASL
   - Replacement Velocity: 4000 m/s
6. CDP Trace Gather
   - Straight Line Binning
7. Velocity Analysis
8. NMO Correction - Floating Datum Referenced
9. Automatic Residual Statics - Surface Consistent
   - Window 500-2000 ms
   - Correlation Lag 24 ms

Processing Parameters used, cont...

10. Velocity Analysis
11. NMO Correction - Floating Datum Referenced
12. Automatic Residual Statics - Surface Consistent
    - Window 400-2800 ms
    - Correlation Lag 30 ms
13. Common Offset F-K DMO
14. Velocity Analysis
15. Front Mute
    - Automatic Stretch Mute
      - Maximum Stretch Allowed - 35%
16. Trim Statics
    - Window 400-2800 ms
    - Correlation Lag 6 ms
17. CDP Stack - 6 fold
18. Steep Dip Finite Difference Migration
    - 85% of Stacking Velocities
    - 90 Degree Angle
19. Filter - 10/15 - 75/85 Hz
20. Trace Equalization - Windows:
    - 0-600 ms
    - 300-900 ms
    - 600-200 ms
    - 900-1600 ms
    - 1600-4000 ms

Processing Parameters used, cont...

10. Velocity Analysis
11. NMO Correction - Floating Datum Referenced
12. Automatic Residual Statics - Surface Consistent
    - Window 400-2800 ms
    - Correlation Lag 30 ms
13. Common Offset F-K DMO
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15. Front Mute
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      - Maximum Stretch Allowed - 35%
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    - Window 400-2800 ms
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    - 85% of Stacking Velocities
    - 90 Degree Angle
19. Filter - 10/15 - 75/85 Hz
20. Trace Equalization - Windows:
    - 0-600 ms
    - 300-900 ms
    - 600-200 ms
    - 900-1600 ms
    - 1600-4000 ms

Synthetic Seismograms

The following three synthetics are enclosed:

East Flett H13

Netla M-31

Arrowhead N-02

East Flett H-13 is the only well which ties one of the reprocesssed lines. Unfortunately this shallow well did not penetrate the target Middle Devonian reservoir. Consequently, the Middle Devonian correlation had to be carried into the area from the other two wells listed above via jump correlations and other seismic data.

Current Geophysical Interpretation

The Middle Devonian carbonates are considered the main reservoir target on this block. A Middle Devonian Time Structure map is attached as Figure 2.

To date, two prospects have been mapped. The first is a small structural closure at the intersection of line FTL-3 and FTL-50 in grid 60°50'123°15', sections 51, 52, 61 and 62. The second prospect is a large anticline in the south half of the block, which appears to grade into a faulted structure towards the north (line FTL-3 SP 2781). Northern closure of this large structure near and under the Liard River is not proven by the existing seismic grid. A proprietary seismic program in the winter of 1996 will determine whether this structure is a drillable prospect.